SONY

CAMERA ADAPTOR

CA-550/550P

MAINTENANCE MANUAL
1st Edition
Serial No. 50001 and Higher

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理など行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

Table of Contents

1. Installation

1-1. Supplied Accessories ..... 1-1 (E)
1-2. Connectors and Cables ..... 1-1 (E)
1-2-1. Connector Input/Output Signals ..... 1-1 (E)
1-2-2. Connection Connector ..... 1-5 (E)
1-2-3. Removal of CCZ Connector ..... 1-5 (E)
1-2-4. Wiring Diagrams for Cables ..... 1-6 (E)
1-3. Installaton of COAX Connector ..... 1-7 (E)
1-4. Function of Internal Switches ..... 1-8 (E)
1-5. Instance of Sytem Configuration ..... 1-10 (E)

2. Service Overview

2-1. Removal of Cabinet ..... 2-1 (E)
2-2. Location of Printed Circuit Boards ..... 2-1 (E)
2-3. Circuit Description ..... 2-2 (E)
2-4. Self-Diagnosis ..... 2-2 (E)
2-5. Extension Boards ..... 2-3 (E)
2-6. Disconnecting/Connecting Flexible Card Wire ..... 2-3 (E)
2-7. Replacement of Board ..... 2-4 (E)
2-7-1. Replacement of FL-180 Board ..... 2-4 (E)
2-7-2. Replacement of CN-1190 Board ..... 2-5 (E)
2-7-3. Adjustment After Replacement of Board ..... 2-6 (E)
2-8. Replacement of AC.DC/DC Converter ..... 2-6 (E)
2-9. Replacement of Multiplex (MPX) Filter ..... 2-7 (E)
2-10. Periodic Replacement Part ..... 2-8 (E)
2-11. Notes on Service ..... 2-8 (E)
2-11-1. Description of EEPROM Data ..... 2-8 (E)
2-11-2. Notes on Repair Parts ..... 2-9 (E)

3. Electrical Alignment

3-1. Preparation ..... 3-1 (E)
3-1-1. Equipment Required ..... 3-1 (E)
3-1-2. Notes on Adjustment ..... 3-1 (E)
3-1-3. Connection ..... 3-2 (E)
3-1-4. Initial Settings ..... 3-3 (E)
3-2. AU-211 Board Adjustment ..... 3-3 (E)
3-2-1. BATTERY ALARM SET Adjustment ..... 3-3 (E)

3-3. TR-90 Board Adjustment ..... 3-4 (E)
3-3-1. MIC 1 RF Adjustment ..... 3-4 (E)
3-3-2. MIC 2 RF Adjustment ..... 3-4 (E)
3-3-3. MIC 1 DEVIATION Adjustment ..... 3-4 (E)
3-3-4. MIC 2 DEVIATION Adjustment ..... 3-5 (E)
3-3-5. INCOM RF Adjustment ..... 3-5 (E)
3-3-6. INCOM DEVIATION Adjustment ..... 3-6 (E)
3-3-7. DATA RF Adjustment ..... 3-6 (E)
3-3-8. INCOM Demodulation Adjustment ..... 3-7 (E)
3-3-9. PGM Demodulation Adjustment ..... 3-8 (E)
3-3-10. DATA Demodulation Circuit Adjustment ..... 3-9 (E)
3-3-11. H CONT Demodulation Circuit Adjustment ..... 3-9 (E)
3-4. MD-103 Board Adjustment ..... 3-10 (E)
3-4-1. VCO 45 MHz Adjustment ..... 3-10 (E)
3-4-2. Y Level Adjustment ..... 3-10 (E)
3-4-3. Y SYNC Cancel Adjustment ..... 3-11 (E)
3-4-4. Y/SKIN DC Balance Adjustment ..... 3-11 (E)
3-4-5. Y/SKIN 90° Adjustment ..... 3-12 (E)
3-4-6. R-Y Level Adjustment ..... 3-12 (E)
3-4-7. B-Y Level Adjustment ..... 3-13 (E)
3-4-8. R-Y/B-Y Carrier Balance Adjustment ..... 3-13 (E)
3-4-9. R-Y/B-Y DC Balance Adjustment ..... 3-14 (E)
3-4-10. R-Y/B-Y 90° Adjustment ..... 3-14 (E)
3-4-11. 67.5 MHz TRAP Adjustment ..... 3-15 (E)
3-5. DM-98 Board Adjustment ..... 3-16 (E)
3-5-1. RETURN VIDEO Demodulation Adjustment ..... 3-16 (E)
3-5-2. VBS/MONITOR Level Adjustment ..... 3-17 (E)
3-5-3. RETURN VIDEO Level Adjustment ..... 3-17 (E)

4. Spare Parts

4-1. Notes on Repair Parts 4-1
4-2. Exploded Views 4-2
RIGHT/TOP PANELS AND BOARDS 4-2
LEFT SIDE PANELS AND BOARDS 4-3
TRIAX AND FUNCTION SWITCHES/CONTROLS 4-4
POWER BLOCK 4-5
REAR PANEL BLOCK 4-6
SCREWS AND WASHERS 4-7
4-3. Electrical Parts List 4-8
4-4. Supplied Accessories 4-27
4-5. Optional Fixtures 4-27

http://getMANUAL.com

5. Semiconductor Pin Assignments

6. Block Diagrams

OVERALL BLOCK 6-1
AU-211 BOARD 6-2
TR-90 BOARD 6-3
MD-103 BOARD 6-4
DM-98 BOARD 6-5

7. Schematic Diagrams

LOCATION OF PRINTED CIRCUIT BOARDS 7-1
AU-211 BOARD 7-2
TR-90 BOARD 7-6
MD-103 BOARD 7-8
DM-98 BOARD 7-10
FRAME WIRING 7-12

8. Board Layouts

AU-211 BOARD 8-1
TR-90 BOARD 8-3
MD-103 BOARD 8-5
DM-98 BOARD 8-7
MB-605 BOARD 8-9

Section 1
Installation

1-1. Supplied Accessories

Accessory	Sony P/N	Qt'y
Shoulder Belt	A-6772-374-A	1
Battery Spacer (for DC-300)	3-694-183-01	1
Cable Holders	3-692-186-01	2
Cable Holder Fixing Screws	7-682-547-09	4
COAX connector*	1-955-388-11	1
Operation Manual	————	1
Maintenance Manual	————	1

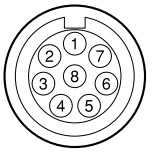
* Refer to Section 1-3 for installation procedures of COAX connector.

1-2. Connectors and Cables

1-2-1. Connector Input/Output Signals

- GENLOCK IN*1/PROMPT OUT*2
  BNC 75 Ω 1.0 Vp-p
  *1: In connection with VTR
  *2: In connection with CCU
- TRIAX
  King type (for CA-550)
  Fischer type (for CA-550P)
- RET OUT
  BNC 75 Ω 1.0 Vp-p
  * Refer to Section 1-4. "Function of Internal Switches, DM-98 Board" for details.

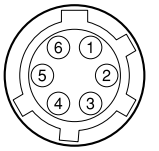
REMOTE (8P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	TX (+)	BVP SERIAL DATA
2	TX (–)	
3	RX (+)	CCU/MSU/RCP/CNU/VCS SERIAL DATA
4	RX (–)	
5	TX GND	GND for TX
6	POWER (+) OUT	+26 V, 200 mA (MAX)
7	POWER (–) OUT	GND for +26 V
8	NC	No connection
	CHASSIS GND	CHASSIS GND

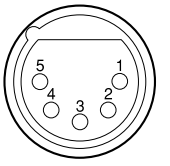
RET CONT (6P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	INCOM 1 MIC ON/OFF IN	Zi ≥ 10 kΩ ON:GND OFF:OPEN
2	INCOM 2 MIC ON/OFF IN	Zi ≥ 10 kΩ ON:GND OFF:OPEN
3	GND	
4	RET 3 ON/OFF IN	Zi ≥ 10 kΩ ON:GND OFF:OPEN
5	RET 1 ON/OFF IN	Zi ≥ 10 kΩ ON:GND OFF:OPEN
6	RET 2 ON/OFF IN	Zi ≥ 10 kΩ ON:GND OFF:OPEN

INCOM (5P FEMALE)

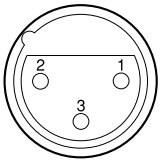


(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	INCOM MIC IN (Y)	–20 dBu (CARBON MIC) –60 dBu (DYNAMIC MIC)
2	INCOM MIC IN (X)	
3	GND (PGM)	
4	INCOM RECEIVE OUT	–20 dBu (with INCOM level control set to mechanical center)
5	PGM 1/2 OUT	–20 dBu (with PGM level control set to mechanical center)

(0 dBu=0.775 Vrms)

MIC IN (3P FEMALE)

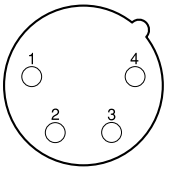


(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	MIC IN (G)	–60 dBu High impedance balanced
2	MIC IN (X)	
3	MIC IN (Y)	

(0 dBu=0.775 Vrms)

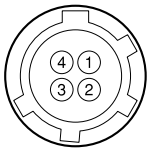
DC IN (4P MALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	GND	GND for DC (+)
2	NC	No connection
3	NC	No connection
4	DC (+) IN	DC 10.5 V to 17 V

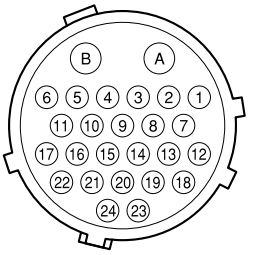
DC OUT (4P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	GND	GND for UNREG
2	NC	No connection
3	NC	No connection
4	UNREG +12 V OUT	+12 V dc 200 mA max

VTR (26P MALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
A	POWER (+) IN	UNREG 10.6 V to 17 V, 3A
B	POWER (–) IN	
1	VBS OUT (X)	VBS 1.0 Vp-p, Zo=75 Ω
2	VBS OUT (G)	
3	Y VIDEO OUT (G)	VS 1.0 Vp-p, Zo=75 Ω
4	Y VIDEO OUT (X)	
5	R-Y VIDEO OUT (X)	Zo=75 Ω
6	R-Y VIDEO OUT (G)	756 mVp-p (J)
7	B-Y VIDEO OUT (X)	700 mVp-p (UC)
8	B-Y VIDEO OUT (G)	525 mVp-p (CE)
9	MIC OUT (X)	Zo ≤ 600 Ω,
10	MIC OUT (Y)	–60 dBu balanced
11	MIC OUT (G)	
12	VTR START/$\overline{\text{STOP}}$ OUT	START:5±1 Vdc, STOP:0 $^{+0.2}_{-0.1}$ Vdc, Zo ≤ 10 kΩ
13	BATT IND IN	Zi=300 Ω *Note 1
14	NC	No connection
15	REC ALARM IN	Zi ≥ 20 kΩ *Note 2
16	NC	No connection
17	GND (SHIELD)	Camera GND
18	PB VIDEO IN (X)	VS 1 Vp-p, Zi=75 Ω
19	PB VIDEO IN (G)	
20	AUDIO MONITOR IN/ VTR SAVE OUT	SAVE: +4.5±0.5 V STANDBY:+9.0$^{+1}_{-0.5}$ V MONITOR: Zi=750 Ω , Zo= ≤ 10 kΩ
21	NC	No connection
22	CF OUT	Color Framing
23	NC	No connection
24	NC	No connection

(0 dBu=0.775 Vrms)

Note

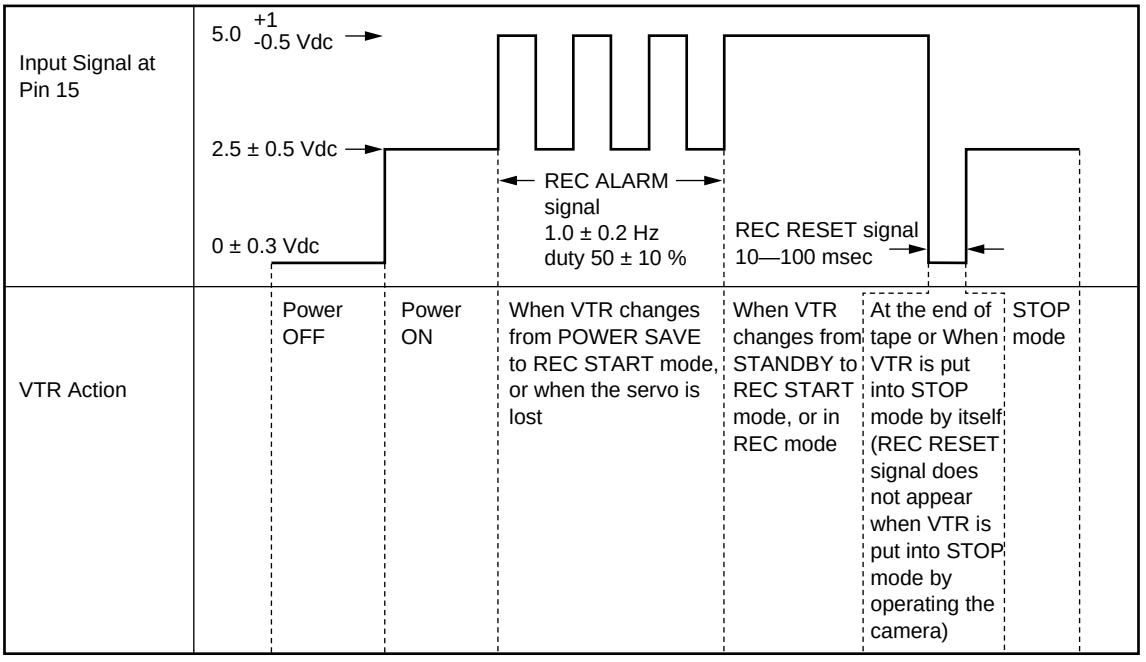
VTR connector is disabled when the CCU is connected.

Note1: Specifications of BATT IND Signal

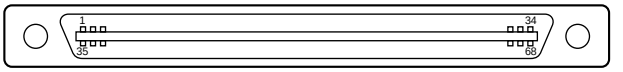
VTR has a battery voltage detection and waring signal generation circuits and it sends the signal shown below to the camera.

Battery Terminal Voltage (VTR internal battery)	12.0—11.1 Vdc	11.1—10.8 Vdc	10.8 Vdc —
Input Signal at Pin 13	0 V	1.0 ± 0.2 Hz duty 50 ± 10 %	2—3 Vdc across 300 Ω
LED on Viewfinder	Stays out	Blinks at 1 Hz	Lights up

Note2: Specifications of REC ALARM Signal


Input Signal at Pin 15
5.0 +1 -0.5 Vdc
2.5 ± 0.5 Vdc
0 ± 0.3 Vdc
REC ALARM signal
1.0 ± 0.2 Hz
duty 50 ± 10 %
REC RESET signal
10—100 msec
VTR Action
Power OFF
Power ON
When VTR changes from POWER SAVE to REC START mode, or when the servo is lost
When VTR changes from STANDBY to REC START mode, or in REC mode
At the end of tape or When VTR is put into STOP mode by itself (REC RESET signal does not appear when VTR is put into STOP mode by operating the camera)
STOP mode

CAMERA (68P MALE)



(EXTERNAL VIEW)

*:In connection with CCU **:In connection with VTR

No.	SIGNAL	SPECIFICATIONS
1	UNREG GND	GND for UNREG
2	UNREG GND	GND for UNREG
3	VF UNREG GND	GND for VF UNREG
4	LENS UNREG GND	GND for LENS UNREG
5	UNREG OUT	10.5 V to 17 V
6	UNREG OUT	10.5 V to 17 V
7	VF UNREG OUT	10.5 V to 17 V
8	LENS UNREG OUT	10.5 V to 17 V
9	R IN (X)	700 mVp-p ± 2%, DC 0 ± 200 mV, Zi ≥ 10 kΩ
10	B IN (X)	700 mVp-p ± 2%, DC 0 ± 200 mV, Zi ≥ 10 kΩ
11	VBS IN (G)	GND for VBS VIDEO
12	Y IN (X)	VS 1.0 Vp-p, Zi = 1 kΩ
13	B-Y IN (X)	700 mVp-p, with sample 350 mV* 756 mVp-p (J) 700 mVp-p (UC) 525 mVp-p (CE) } ** gM
14	NC	No connection
15	C IN (X)	SC for S connector
16	VBS GENLOCK OUT (X)	1.0 Vp-p±6 dB, Zo = 75 Ω
17	RET VIDEO OUT (G)	GND for RET VIDEO
18	MONITOR VIDEO IN (X)	VS 1 Vp-p, Zi = 1 kΩ
19	BATTERY ALARM OUT	Zo = 300 Ω
20	NC	No connection
21	AUDIO CH1 CONT IN	0 V (0 dB) to 7 V (–50 dB or less)
22	MIC 1 IN (Y)	Zi ≥ 600 Ω, –60 dBu balanced
23	NC	No connection
24	SKIN TONE GATE IN	1.0 Vp-p
25	TAPE REM OUT	No connection
26	VTR SYNC IN	+5.0 Vp-p Negative pulse, Zi ≤ 100 Ω
27	RET EN IN	ENABLE; 0 V, DISABLE; +5 V or OPEN
28	PB REF OUT	PB; +4.5 V, CAM; 0 V or OPEN
29	H CONT OUT	0 V to 5 V, Analog
30	ANALOG GND	
31	DIGITAL HD IN	3 Vp-p for Digital
32	COM CONT OUT	5 Vp-p
33	IIC CLOCK IN (CA)	5 Vp-p
34	IIC CLOCK IN (ST)	5 Vp-p

No.	SIGNAL	SPECIFICATIONS
35	UNREG GND	GND for UNREG
36	UNREG GND	GND for UNREG
37	VF UNREG GND	GND for VF UNREG
38	LENS UNREG GND	GND for LENS UNREG
39	UNREG OUT	10.5 V to 17 V
40	UNREG OUT	10.5 V to 17 V
41	VF UNREG OUT	10.5 V to 17 V
42	LENS UNREG OUT	10.5 V to 17 V
43	G IN (X)	700 mVp-p ± 2%,DC 0 ± 200 mV, Zi ≥ 10 kΩ
44	R/G/B GND	GND for R/G/B VIDEO
45	VBS IN (X)	1.0 Vp-p ± 10%, Zi = 75 Ω
46	R-Y IN (X)	700 mVp-p, with sync 350 mV* 756 mVp-p (J) 700 mVp-p (UC) 525 mVp-p (CE) } **
47	Y/R-Y/B-Y GND	GND for Y/R-Y/B-Y
48	NC	No connection
49	C IN (G)	GND for C
50	VBS GENLOCK OUT (G)	GND for GENLOCK
51	RET VIDEO OUT (X)	1.0 Vp-p, Zo = 75 Ω
52	MONITOR VIDEO IN (G)	GND for MONITOR VIDEO
53	VTR START/STOP IN	Zi ≤ 10 kΩ
54	NC	No connection
55	MIC 1 IN (G)	GND for CAM MIC
56	MIC 1 IN (X)	Zi ≥ 600 Ω, –60 dBu balanced
57	NC	No connection
58	NC	No connection
59	AUDIO LEVEL OUT	No connection
60	NC	No connection
61	V RESET OUT/CF IN	V Reset;0 V to +5 V, CF; 0 V to –5 V
62	REC TALLY OUT	ON; +5 V, OFF; +2.5 V or 0 V, Zo ≥ 20 kΩ
63	VTR SAVE IN	SAVE; +4.5 V, STANDBY; 0 V, Zi ≤ 10 kΩ
64	GND	
65	SD IN/OUT	Serial data for camera control
66	COM DATA IN	5 Vp-p
67	IIC DATA IN/OUT (CA)	5 Vp-p, 4700 Ω, Pull up
68	IIC DATA IN/OUT (ST)	5 Vp-p, 4700 Ω, Pull up

(0 dBu=0.775 Vrms)

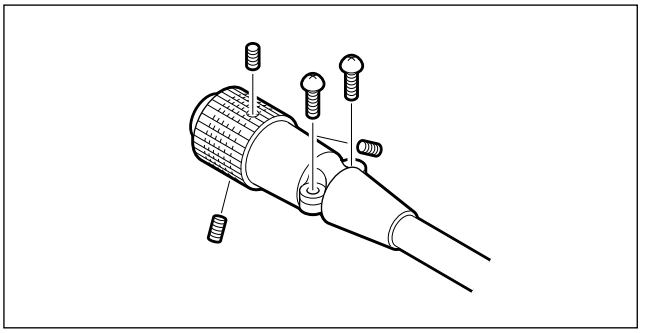
1-2-2. Connection Connector

Connection made with the connector panels during installation or service, should be made with the connectors/ complete cable assemblies specified in the following list, or equivalent parts.

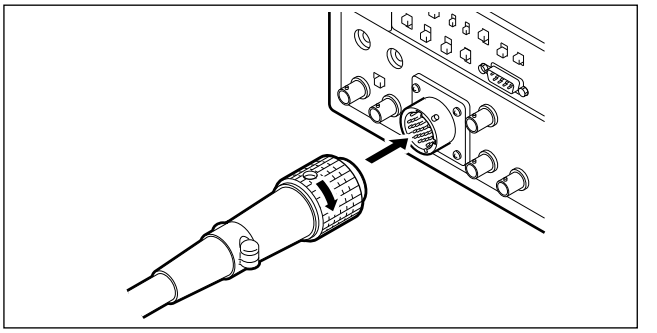
Connector Name	Connection Connectors/Cables
GENLOCK/ PROMPT(BNC) RET OUT	1-560-069-11 Plug, BNC or B-B Cable assembly (cable length 1.5 m, option)
RET CONT (6P FEMALE)	1-560-078-00 Plug, 6P Male or HIROSE HR10-7PA-6P equivalent
REMOTE (8P FEMALE)	1-766-848-11 Plug, 8P Male or CCA cable assembly (option) CCA-5-10 (10m)/ CCA-5-3 (3m)
INCOM (5P FEMALE)	1-508-370-11 XLR, 5P Male or CANNON XLR-5-12C equivalent
MIC IN (3P FEMALE)	1-508-084-00 XLR, 3P Male or CANNON XLR-3-12C equivalent
DC IN (4P MALE)	1-508-362-00 XLR, 4P Female or CANNON XLR-4-11C equivalent or Cable assembly (supplied with AC-550) 1-551-577-00 Cable with XLR plugs
DC OUT (4P FEMALE)	1-566-425-11 Plug, 4P Male or HIROSE HR10A-7P-4P equivalent
VTR (26P MALE)	1-564-184-00 Plug, 26P Female or CCZ cable assembly (option) CCZ-2 (2m)/CCZ-10 (10m)

1-2-3. Removal of CCZ Connector

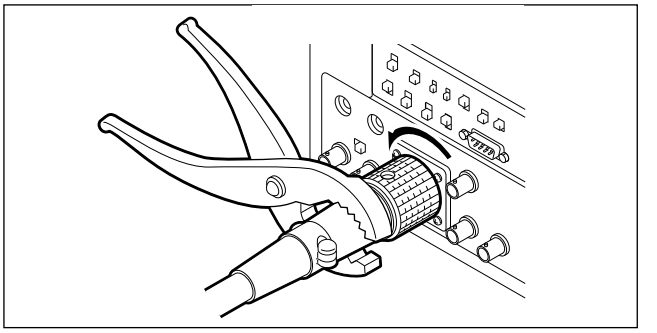
1. Remove the two screws and three setscrews.



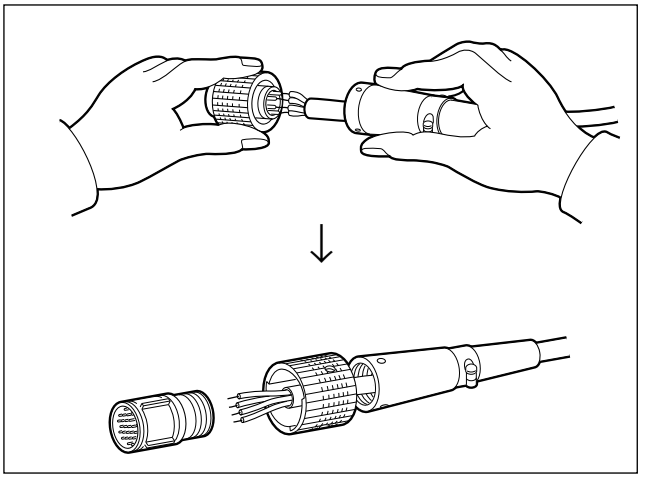
2. Connect the plug to the VTR or camera.



3. Loosen the plug counterclockwise by pliers.

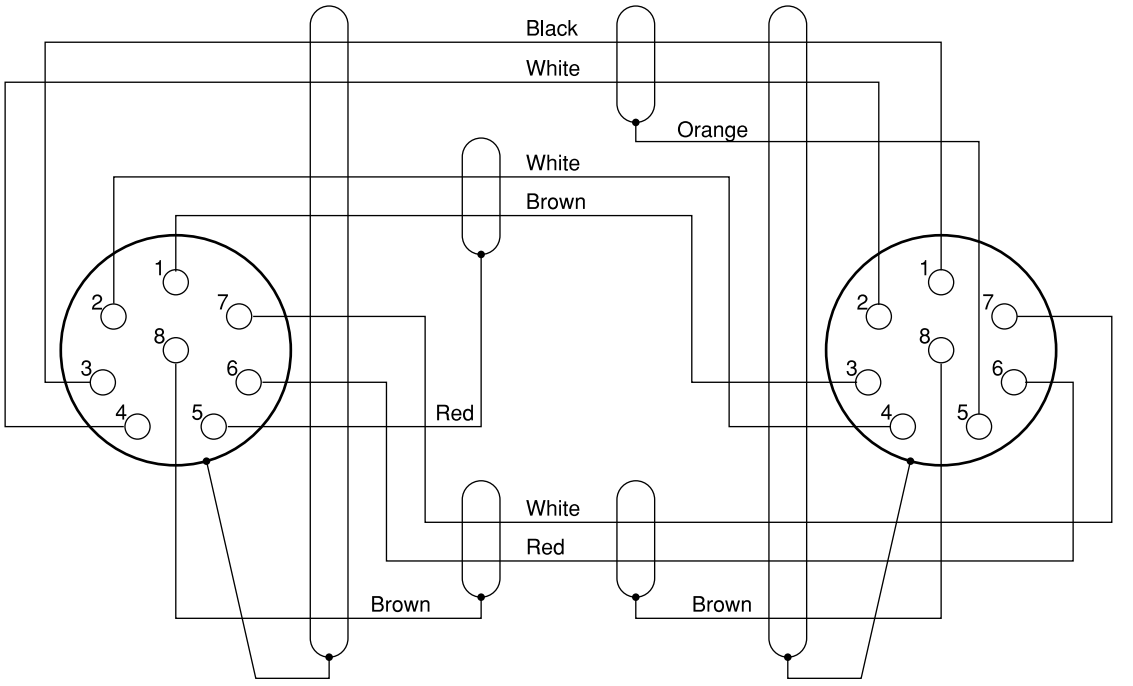


4. Disassemble as illustrated and unsolder.



1-2-4. Wiring Diagrams for Cables

CCA-5 Cable

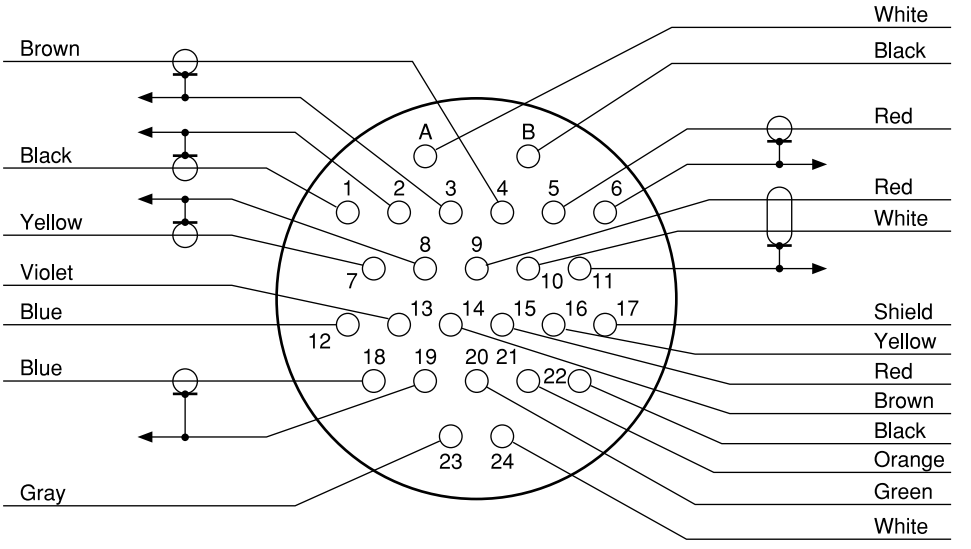


8P CONNECTOR(MALE)
(WIRING SIDE)

8P CONNECTOR(MALE)
(WIRING SIDE)

CCZ Cable

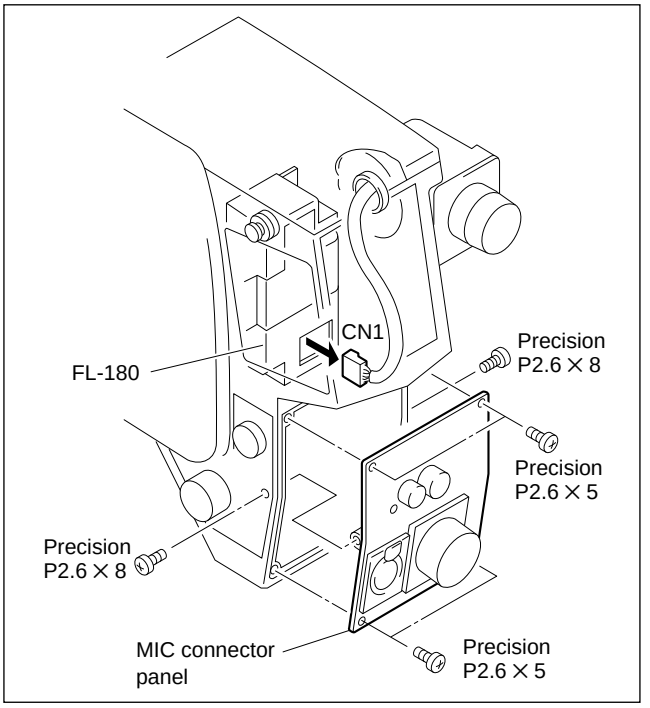
26P CONNECTOR (FEMALE/MALE)
(WIRING SIDE)



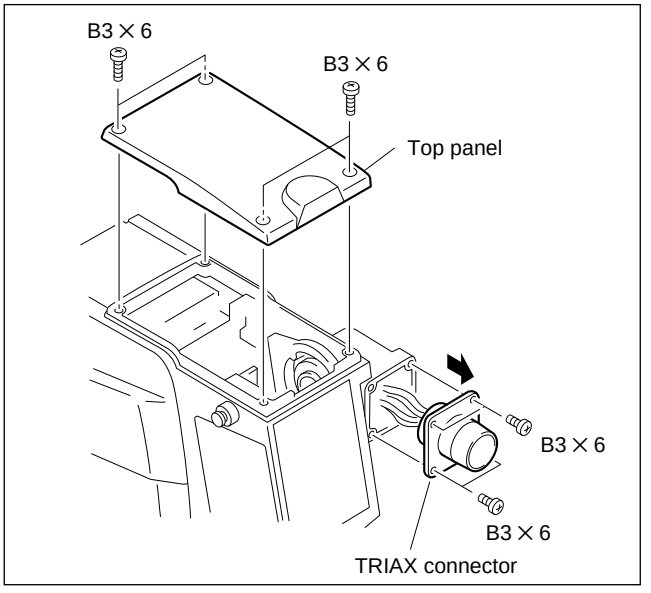
1-3. Installaton of COAX Connector

To connect between the CA-550/550P and CCU-700/700P with a coaxial cable, instead of a triaxial cable, the TRIAX connector of the CA-550/550P can replace the supplied COAX connector. Proceed as follows.

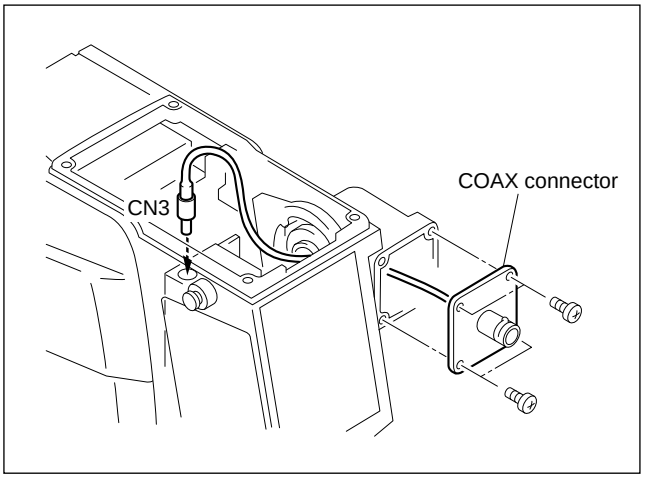
1. Remove the six screws to remove the MIC connector panel. Disconnect CN1 on the FL-180 board.



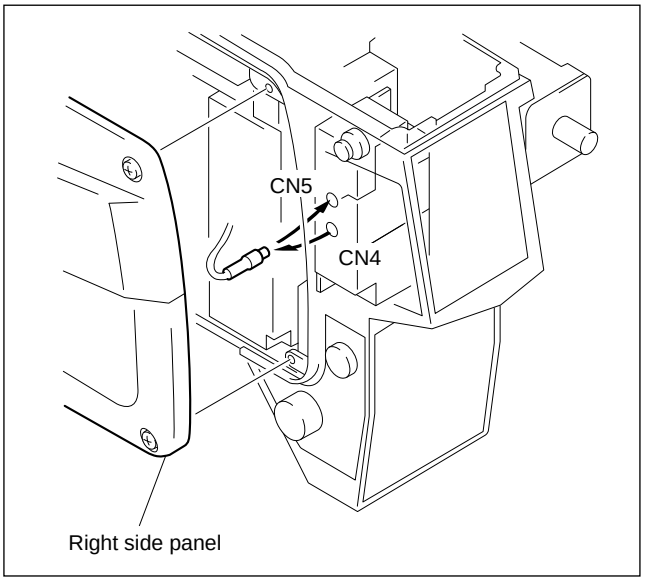
2. Remove the four screws and carefully pull out the TRIAX connector. Remove the top panel, referring to Section 2-1.



3. Install the COAX connector to the connector box with the screws that were removed in Step 2. Connect the cable to CN3 on the FL-180 board. Insert until it clicks.



4. Remove the right side panel, referring to Section 2-1. Unplug the cable from CN4 on the FL-180 board and reconnect it to CN5. Insert until it clicks.



5. Reinstall the top and right side panels.

1-4. Function of Internal Switches

SW1 : INCOM MIC select switch
Select according to a microphone of the headset to be connected to INCOM connector.
C : Carbon microphone
D : Dynamic microphone
Factory-set position : C

SW2 : INCOM CONTROL MODE select switch (SW2-1 to 2-8)
SW2-1 : INCOM MIX switch
Turn on to add the intercom audio to the program audio.
Factory-set position : OFF

SW2-2 : INCOM/PGM MIX switch
Turn on to mix the program audio and the intercom audio in front of IC5 (EVR).
Factory-set position : OFF

SW2-3 : PGM MIX switch
Turn on to add the program audio to the intercom audio.
Factory-setting : OFF

SW2-4 : PGM/INCOM level control mode select switch
ON : INCOM level control enables to adjust the levels of the intercom and program audios simultaneously, and PGM level control to adjust a mix ratio between the intercom and program audios.
OFF : Normal mode. INCOM level control adjusts the intercom audio level, and PGM level control adjusts program audio level.
Factory-set position : OFF

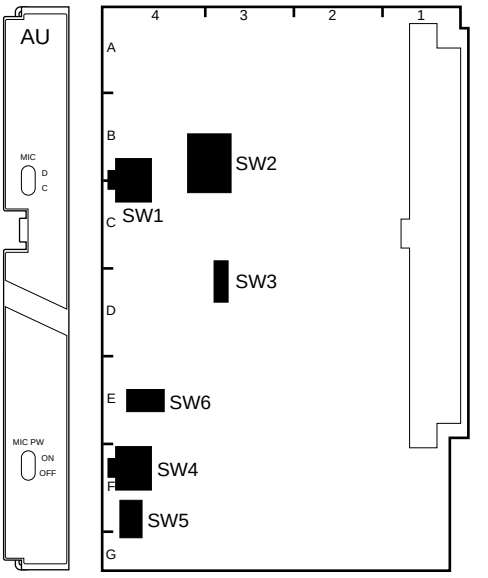
SW2-5 : SIDE TONE ON/OFF switch
Turn on to mix the side tone signal. (Mixing level: –26 dB)
RV3/AU-211 board adjusts the side tone level.
Factory-set position: ON

SW2-6 : Not used
Factory-set position : OFF

SW2-7 : PGM ON/OFF switch
Turn on to output the program audio to EARPHONE jack.
Factory-set position : OFF

SW2-8 : PB AUDIO ON/OFF switch
Turn on to output the playback audio to EARPHONE jack while VTR is playing back. RV1/AU-211 board adjusts the playback audio level.
Factory-set position : OFF

AU-211 Board



SW-3 : BACK TALLY CONTROL switch (SW3-1, 3-2)
SW3-1 : BATTERY ALARM ON/OFF switch
Turn on to output a battery alarm signal to BACK TALLY lamp.
Factory-set position : OFF

SW3-2 : POWER SAVE switch
Always set to ON.

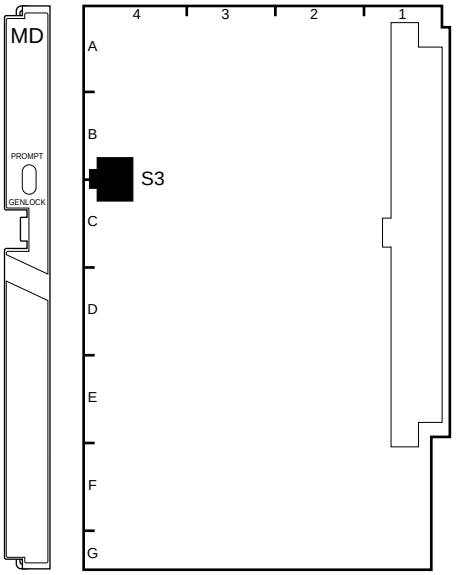
SW4 : MIC POWER ON/OFF switch
Turn on to use a microphone which operates with an external power supply system.
When set to ON, check the setting of SW5/AU-211 board.
Factory-set position : OFF

SW5 : AB/PHANTOM MIC select switch
Select according to an microphone which operates with an external power supply system to be used.
AB : AB POWERING +12 V microphone
PHANTOM : PHANTOM +48 V microphone
Factry-set position : PHANTOM

SW6 : MIC LINE select switch
Selects a signal to be transmitted to MIC1 line.
MIC1 : MIC signal input at MIC IN connector of BVP-550/550P
MIC2 : MIC signal input at MIC IN connector of CA-550/550P
Factory-set position : MIC 1

http://getMANUAL.com

MD-103 Board



S3 : VBS GENLOCK IN/PROMPTER OUT select switch

Selects an input/output signal at GENLOCK/PROMPT connector (BNC).

Note

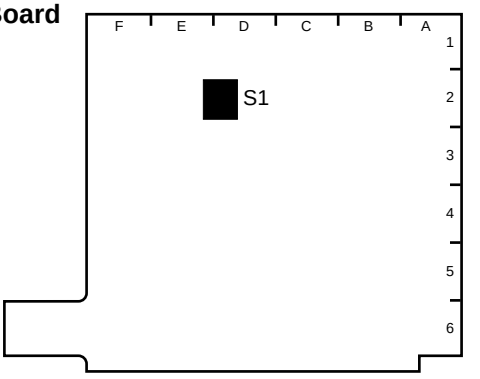
To output PROMPTER video signal, the teleprompter unit BKP-5971 (available separately) is required.

GENLOCK : In connection of VTR

PROMPT : In connection of CCU

Factory-set position: GENLOCK

DM-98 Board



S1 : RET OUT select switch (S1-1 to S1-4)

S1-1 to S1-4 select an input/output signal at RET OUT connector (BNC).

S1-1 :

Disables automatically switching between PB VIDEO and RET VIDEO.

Factory-set position : OFF

S1-2 :

Disables automatically switching between VBS/MONITOR and PB/RET.

Factory-set position : OFF

S1-3 :

Selects VBS or MONITOR.

Factory-set position : OFF

S1-4 :

Inhibits RET CONT signal with S1-4 set to OFF.

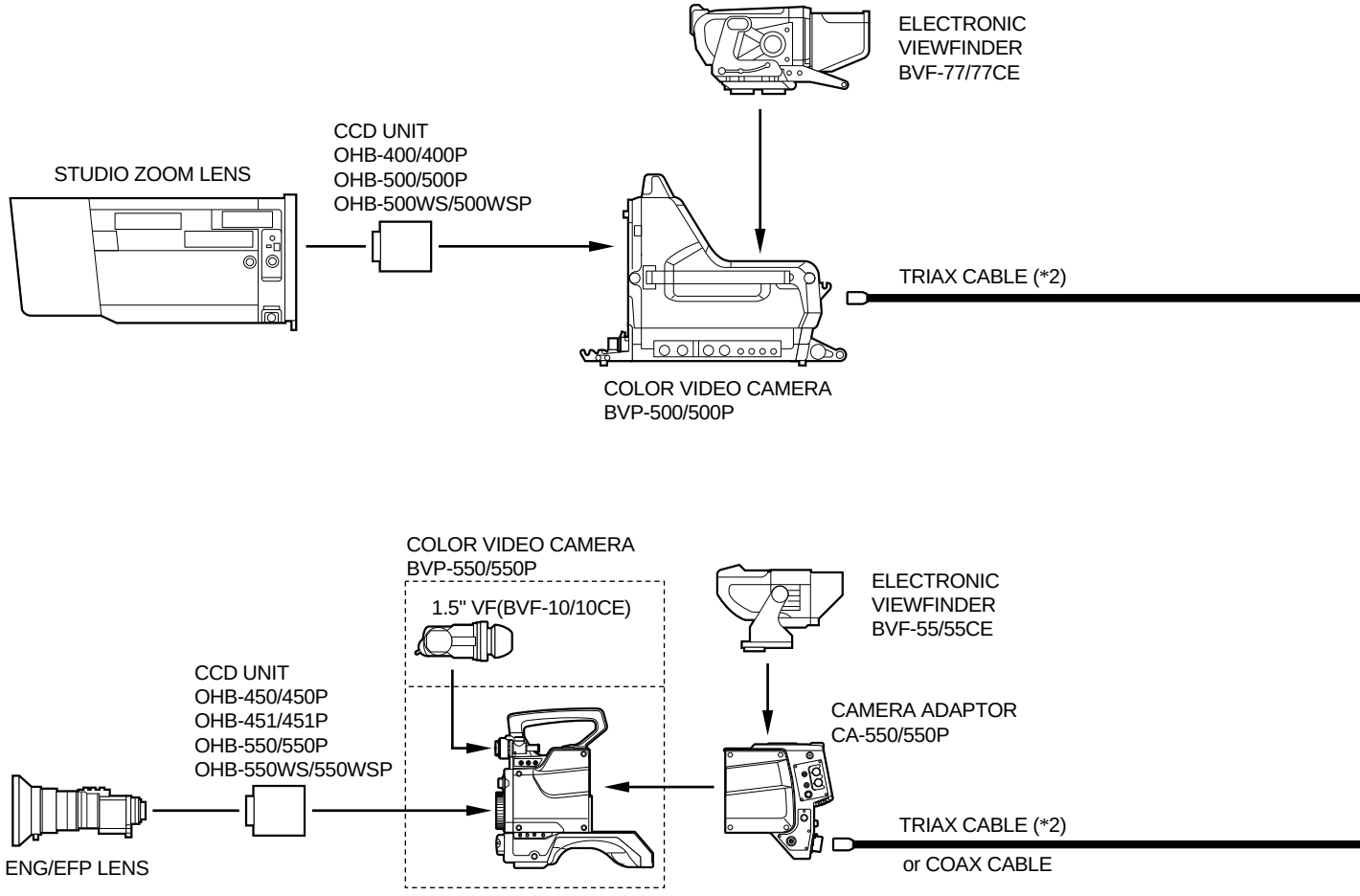
Factory-set position : ON

The following signals are available in combination of the switch positions of S1-1 to S1-4, or depending on whether the RET CONT signal is on or off, as listed in the table below.

X: Don't care

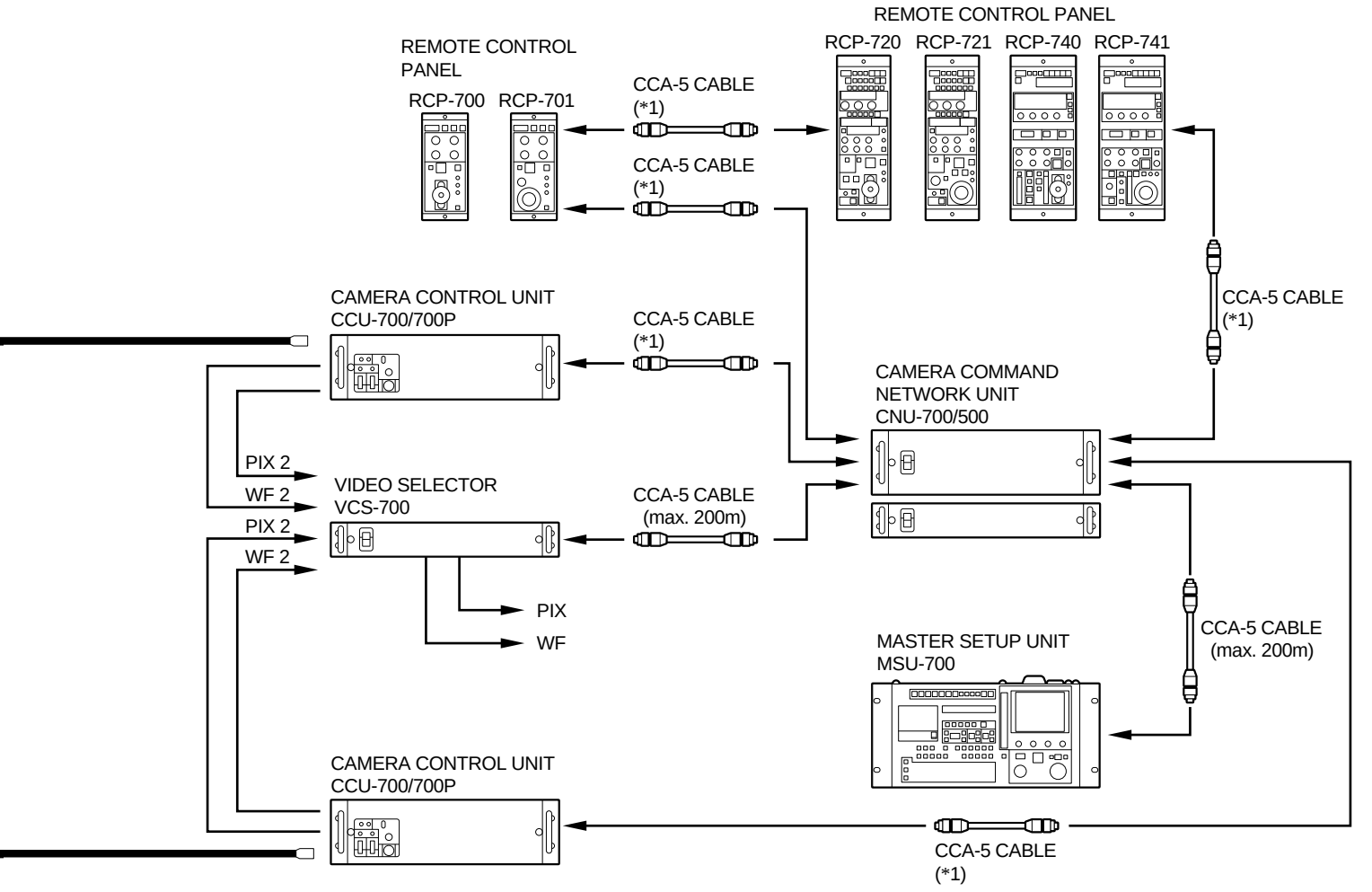
S1-1	S1-2	S1-3	S1-4	RET CONT signal	Input/Output signal at RET OUT connector
OFF	OFF	X	X	X	RET VIDEO OUT (in connection with CCU)
					PB VIDEO OUT (in connection with VTR)
ON	OFF	X	X	X	PB VIDEO OUT
X	ON	OFF	OFF	X	VBS IN
X	ON	ON	OFF	X	MONITOR OUT
OFF	ON	OFF	ON	ON	RET VIDEO OUT (in connection with CCU)
					PB VIDEO OUT (in connection with VTR)
				OFF	VBS IN
OFF	ON	ON	ON	ON	RET VIDEO OUT (in connection with CCU)
					PB VIDEO OUT (in connection with VTR)
				OFF	MONITOR OUT

1-5. Instance of Sytem Configuration

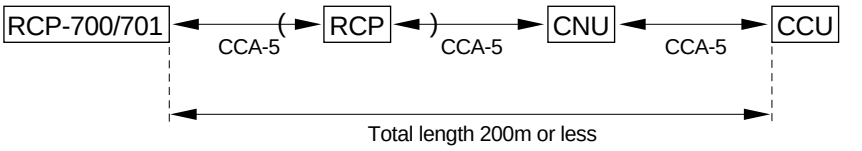


OTHER OPTIONAL ACCESSORIES

For BVP-500/500P	STANDALONE UNIT BKP-5910/5910P
	SCRIPT HOLDER BKP-7911/7912
For BVP-550/550P	ELECTRET CONDENSER MICROPHONE ECM-MS5
	MICROPHONE C-74 (Sony P/N 1-542-099-11)
	CRADLE SUSPENSION CRS-3P
	CARRYING CASE LC-303SFT
For CA-550/550P	TELEPROMPTER UNIT BKP-5971



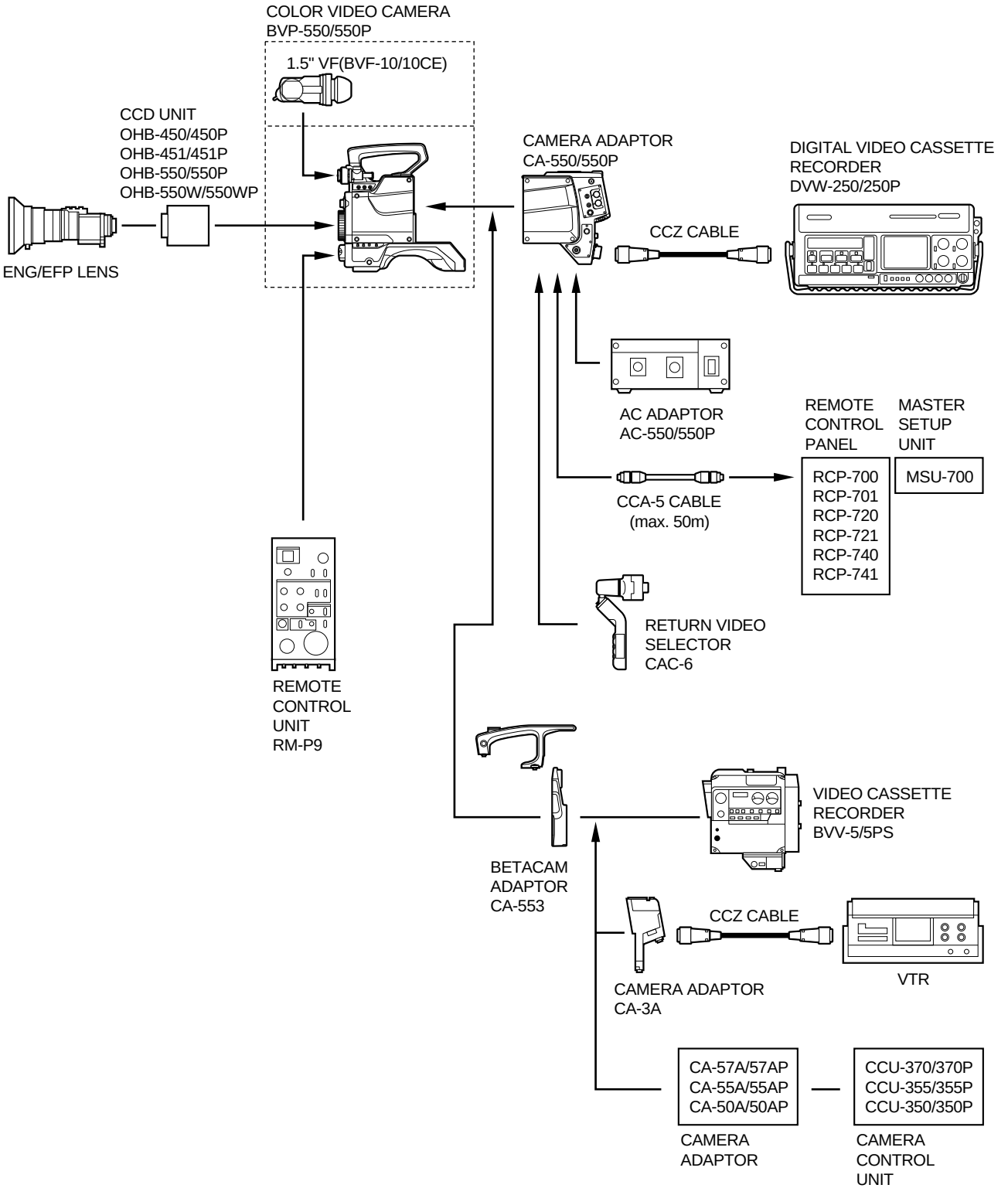
*1: CCA-5 CABLE LENGTH



*2: TRIAX CABLE LENGTH

Diameter	Maximum length
8.5 mm	1000 m (500m*)
14.5 mm	2000 m (1000m*)

* When BKP-5971 is installed


COLOR VIDEO CAMERA
BVP-550/550P
1.5" VF(BVF-10/10CE)
CCD UNIT
OHB-450/450P
OHB-451/451P
OHB-550/550P
OHB-550W/550WP
ENG/EFP LENS
CAMERA ADAPTOR
CA-550/550P
DIGITAL VIDEO CASSETTE
RECORDER
DVW-250/250P
CCZ CABLE
AC ADAPTOR
AC-550/550P
REMOTE
CONTROL
PANEL
MASTER
SETUP
UNIT
RCP-700
RCP-701
RCP-720
RCP-721
RCP-740
RCP-741
MSU-700
CCA-5 CABLE
(max. 50m)
RETURN VIDEO
SELECTOR
CAC-6
REMOTE
CONTROL
UNIT
RM-P9
VIDEO CASSETTE
RECORDER
BVV-5/5PS
BETACAM
ADAPTOR
CA-553
CCZ CABLE
VTR
CAMERA ADAPTOR
CA-3A
CA-57A/57AP
CA-55A/55AP
CA-50A/50AP
CAMERA
ADAPTOR
CCU-370/370P
CCU-355/355P
CCU-350/350P
CAMERA
CONTROL
UNIT

Section 2
Service Overview

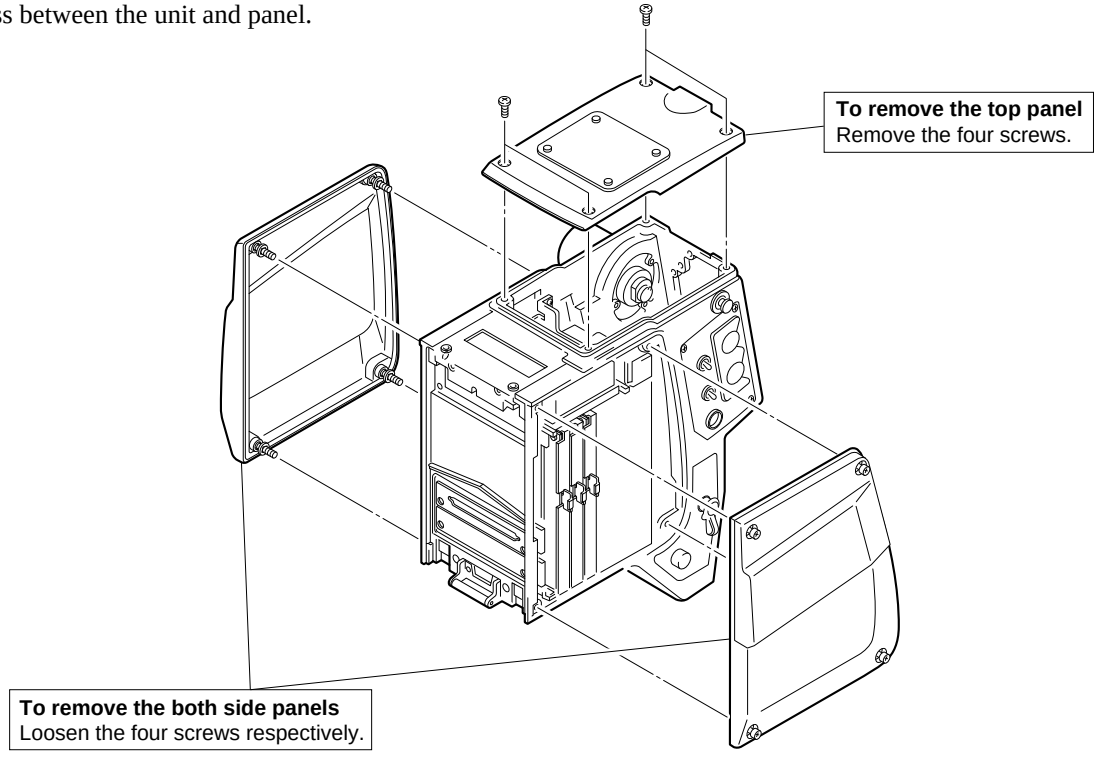
CAUTION

The power block inside the CA-550/550P will go very hot during operation. If you remove the side panel and touch the power block, there is some danger to get burned. When you would open the side panel for check or adjustment, please allow for at least 10 minutes after powering off until the inside cools off.

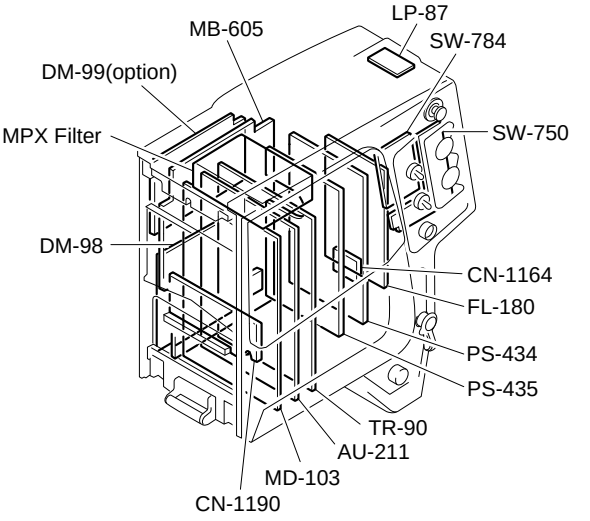
2-1. Removal of Cabinet

Note

- In installing the left side panel, take care not to pinch the harness between the unit and panel.



2-2. Location of Printed Circuit Boards



2-3. Circuit Description

The CA-550/550P mainly consists of the following boards.

MD-103 board

The MD-103 board modulates the luminance signal Y, the color difference signals R-Y and B-Y. And it selects a signal to be input/output at GENLOCK IN/PROMPT OUT connector. And also it quadrature-modulates the Y signal and SKIN GATE signals with the carrier of 22.5 MHz and the R-Y and B-Y signals with the carrier of 45 MHz. The resultant signal is sent to the CCU.

AU-211 board

The CHU/RCP data is input/output from/to the AU-211 board. And processings for the audio signal such as the INCOM mode switching and gain control are performed. The received data from the RCP goes through the photo-coupler and is then send as the RX DATA to control the camera (CHU), via the 68P I/F connector to the CHU. If the CCU is connected to the unit, the RX DATA is automatically send to the CCU. As for how to select the INCOM mode, refer to Section 1-4 “Function of Internal Switches — AU-211 board”.

TR-90 board

The TR-90 board modulates/demodulates the audio signals such as the MIC, INCOM and PGM. It also demodulates the H CONT signal and modulates/demodulates the CHU/CCU DATA. And it also generates the TONE signal, piggybacks it on to the CHU DATA and ther modulates the resultant signal.

DM-98 board

The DM-98 board demodulates the RET VIDEO signal and also selects an output signal at the RET OUT connector. The relationships between the switch setting and output signal are given in Section 1-4 “Function of Internal Switches — DM-98 board”.

Communication with CCU

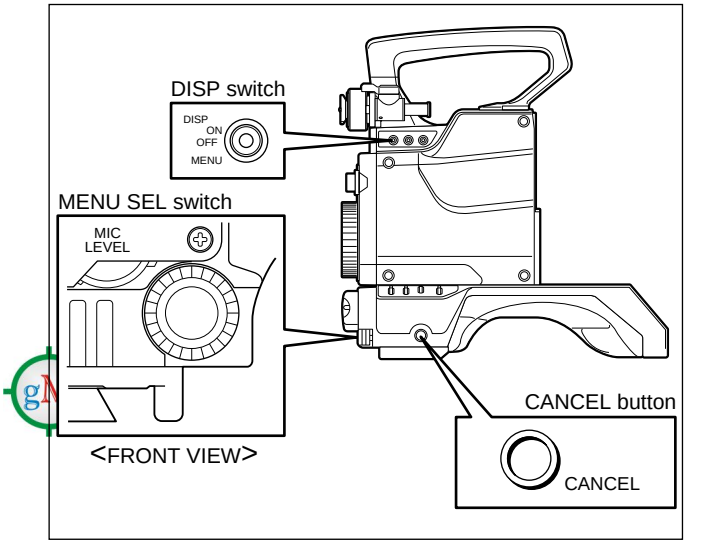
The CA-550/550P is not provided with the microcomputer, so it communicates with the CCU through the camera.
A IIC bus line is equipped for the communication between the camera and camera adaptor. The IIC bus line is also used for the interface with the CCU.

2-4. Self-Diagnosis

The CA-550/550P has a diagnosis mode used for self-diagnosis of every plug-in board. The diagnosis page is displayed on the viewfinder screen of the camera.

- Equipment required
  Color Video Camera BVP-550/550P
  CCD Unit OHB-450/550 series
  Supply power from a camera control unit CCU-700/700P, AC adaptor AC-550/550CE or VTR.

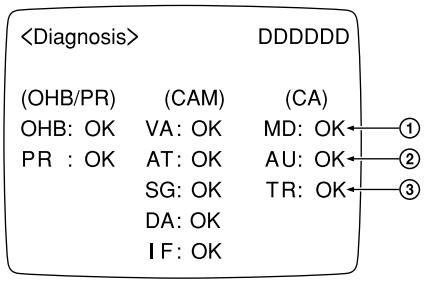
- Switches and Button



- Operation

1. Set POWER switch to CCU/EXT position. (If the VTR is connected, set to VTR position.)
2. Set DISP switch to MENU position. Operation menu will be displayed.
3. Rotate MENU SEL switch to display “Diagnosis” page and then press MENU SEL switch.
4. The menu page is returned to the previous page every time CANCEL button is pressed.
5. To exit Setup menu, set DISP switch to OFF.

• Viewfinder Screen



• Display Descriptions

Marks	Board	Judging Point	Expected Abnormality
①	MD-103	Y RF output Color-difference RF output	• RF carrier levels for Y and R-Y/B-Y are out of specs. * • Improper connection of the board
②	AU-211	+7.5 V and INCOM +7.5 V	• Power voltage for the board is out of specs. * • Improper connection of the board
③	TR-90	RF output (TP3)	• Carrier level for AUDIO RF is out of specs. * • Improper connection of the board

* Only when no video signal is input.

Note

When the CA-550/550P is not connected to the CCU, the columns ① through ③ will display "– –".

Refer to BVP-550/550P maintenance manual for descriptions on columns of BVP and OHB.

2-5. Extension Boards

The extension boards and harness are available separately for check or adjustment of some printed circuit boards.

Extension Board/ Harness	Sony P/N	To be extended
EX-464	J-6395-040-A	MD-103 AU-211 TR-90 Plug-in boards for BVP-550/550P
EX-511	J-6395-020-A	DM-98 DM-99 (option)

2-6. Disconnecting/Connecting Flexible Card Wire

The two flexible card wires are used between the MB-605 and CN-1190 boards. Take care not to break these flexible card wires. This shorten the wire life.

Disconnecting

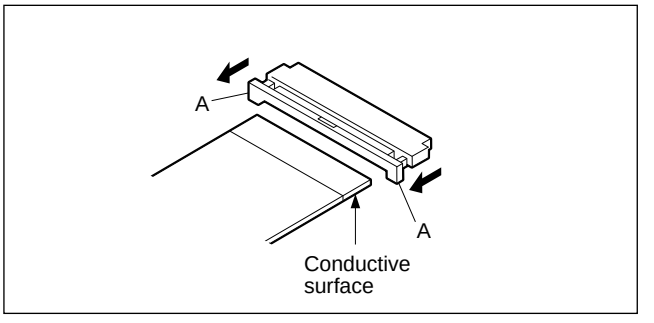
1. Turn off the power.
2. Slide portions A in the direciton of the arrow to unlock and pull out the flexible card wire.

Connecting

Notes

- Be careful not to insert the flexible card wire obliquely.
- Check that the conductive surface of the flexible card wire is not soiled with dust.

1. Slide portions A in the direction of the arrow and insert the flexible card wire as far as it will go with the conductive surface down.
2. Slide portions A in the reverse direction to lock.



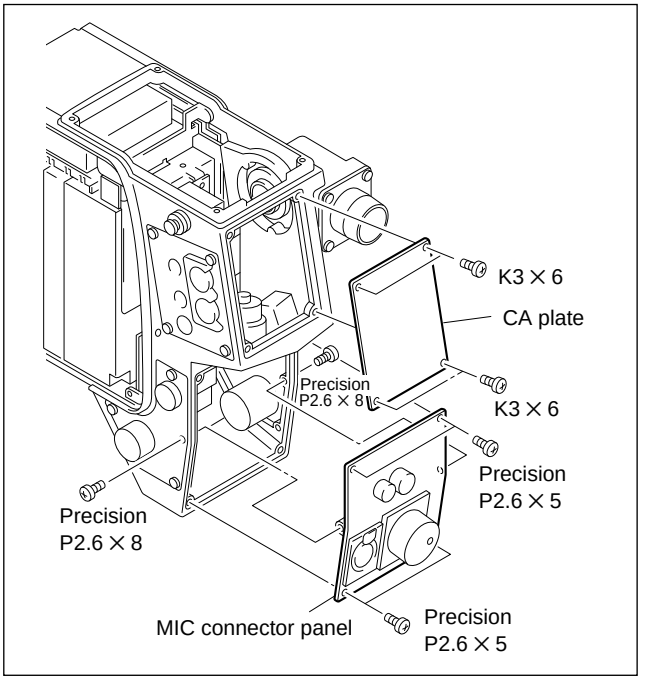
2-7. Replacement of Board

2-7-1. Replacement of FL-180 Board

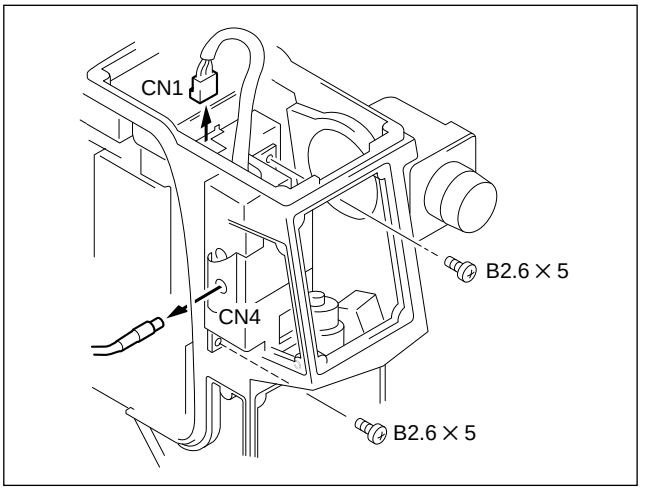
Note

Every electrical part mounted on the FL-180 board cannot be replaced. If there is any defective part, replace the board itself.

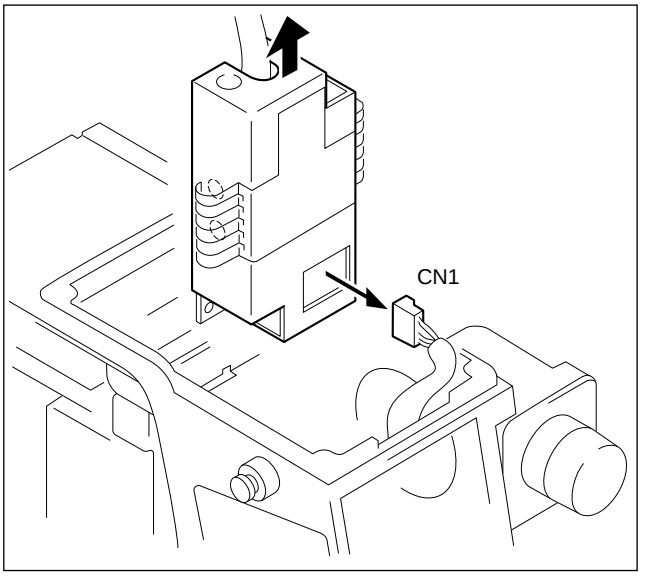
1. Remove the right side panel and top panel referring to Section 2-1.
2. Remove the four screws to remove the CA plate.
3. Remove the six screws to remove the MIC connector panel.



4. Disconnect the two connectors, CN1 from the converter and CN4 from the FL-180 board. Remove the two screws securing the FL-180 board.



5. Lift out the FL-180 board and disconnect CN1 from the board.



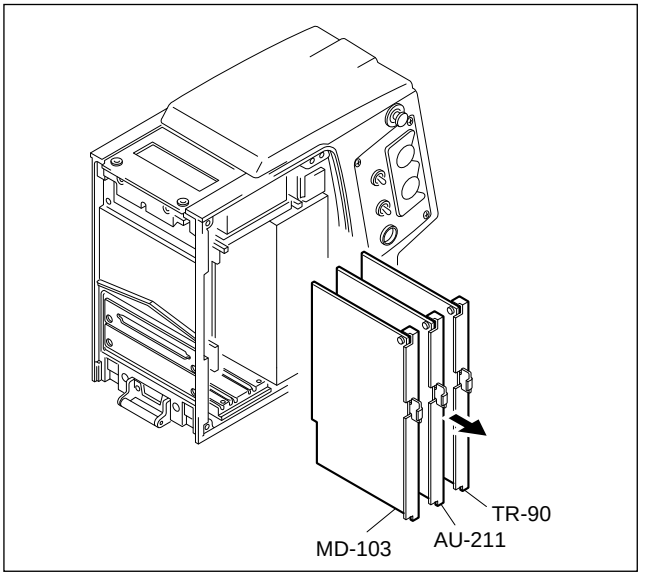
6. Install a new board in the reverse procedures of the removal.

2-7-2. Replacement of CN-1190 Board

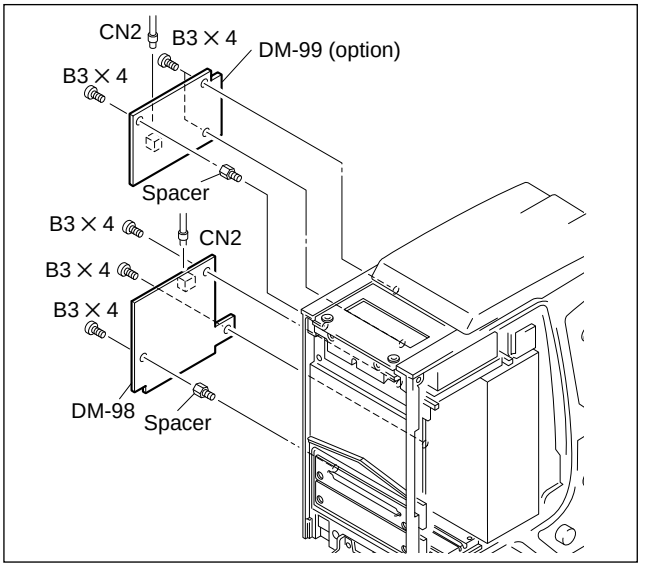
Note

Every electrical part mounted on the CN-1190 board cannot be repalced. If there is any defective part, replace the board itself.

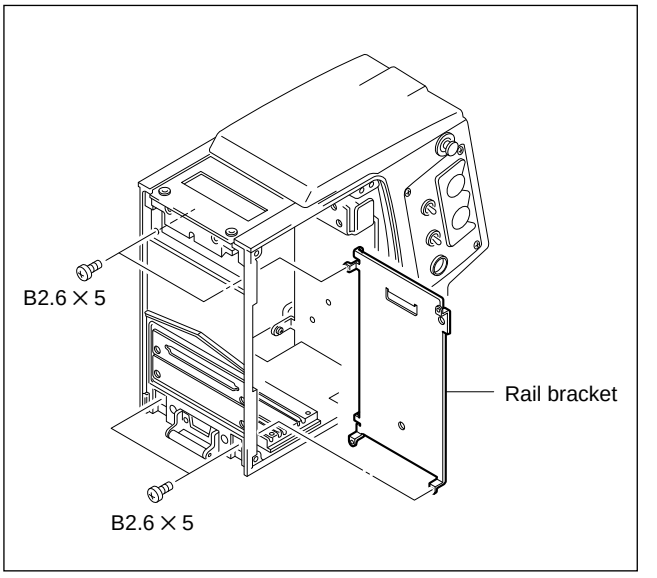
1. Remove the right and left side panels referring to Section 2-1.
2. Pull out the three plug-in boards, MD-103, AU-211 and TR-90.



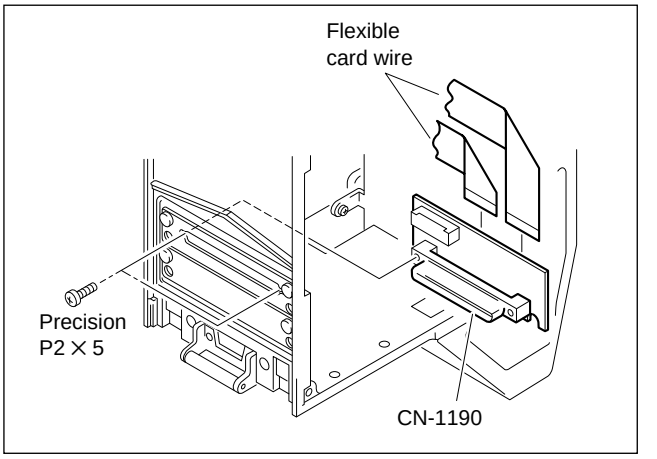
3. Disconnect CN2 from the DM-98 board. Remove the three screws and remove the spacers and the DM-98 board. If the option board DM-99 is installed, carry out Step 4.
4. Disconnect CN2 from the DM-99 board. Remove the three screws and remove the spacers and the DM-99 board.



5. Remove the four screws and remove the rail bracket.



6. Remove the two screws securing the CN-1190 board. Disconnect the two flexible card wires referring to Section 2-6.



7. Install a new board in the reverse procedures of the removal.

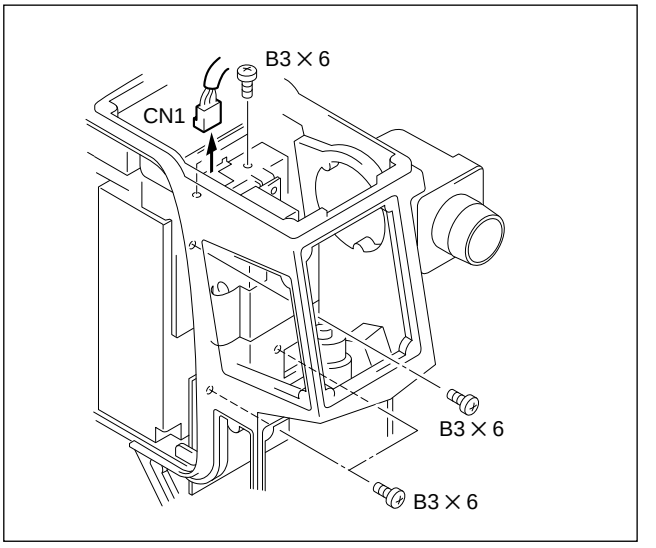
2-7-3. Adjustment After Replacement of Board

If no adjustment item is listed, no adjustment is required after replacement.

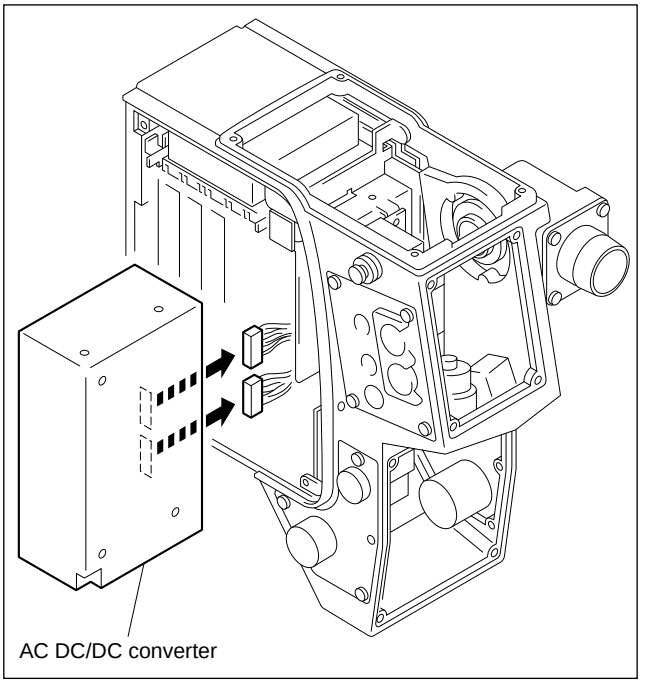
Board	Adjustment required
AU-211	—
TR-90	—
MD-103	—
DM-98	3-5-1. RETURN VIDEO Demodulation Adjustment 3-5-3. RETURN VIDEO Level Adjustment
MB-605	—
FL-180	—
SW-750	—
SW-784	—
CN-1190	—
CN-1164	—
LP-87	—
AC.DC/DC Converter	—

2-8. Replacement of AC.DC/DC Converter

1. Remove the right side panel and top panel referring to Section 2-1.
2. Carry out Steps 2 and 3 in Section 2-7-1 “Replacement of FL-180 Board”.
3. Disconnect CN1 from the AC.DC/DC converter. Remove the four screws securing the AC.DC/DC converter.



4. Pull out the AC.DC/DC converter and disconnect the two connectors from the converter.

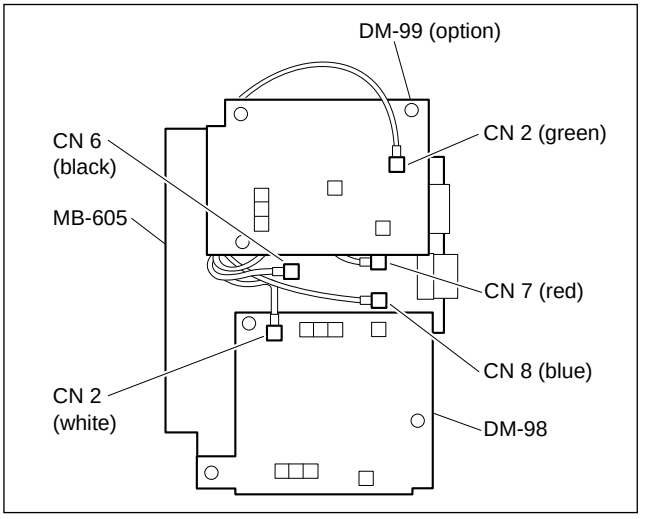


5. Install a new converter in the reverse procedures of the removal.

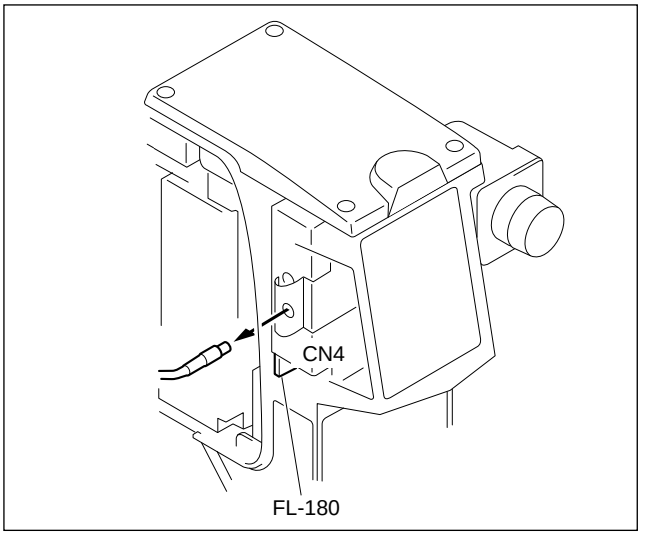
http://getMANUAL.com

2-9. Replacement of Multiplex (MPX) Filter

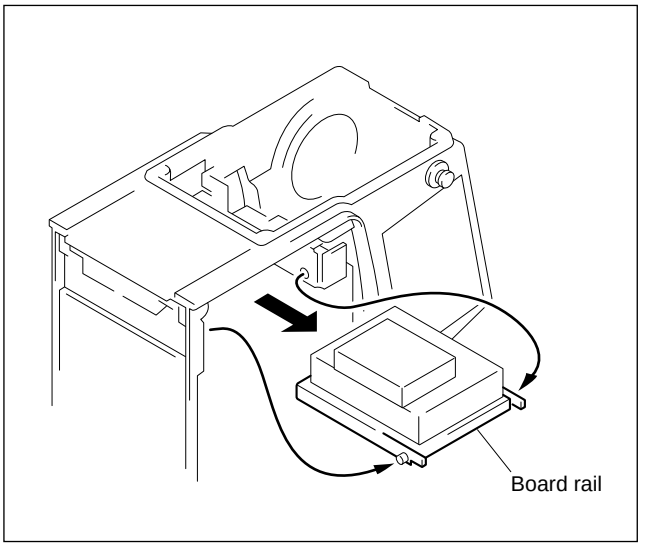
1. Remove the right and left side panels and top panel referring to Section 2-1.
2. Carry out Step 2 in Section 2-7-2 “Replacement of CN-1190 Board”.
3. Carry out Steps 2 and 3 in Section 2-7-1 “Replacement of FL-180 Board”.
4. Disconnect the three connectors CN6, CN7 and CN8 from the MB-605 board.
5. Disconnect CN2 from the DM-98 board. If the option board DM-99 is installed, also disconnect CN2 from the DM-99 board.



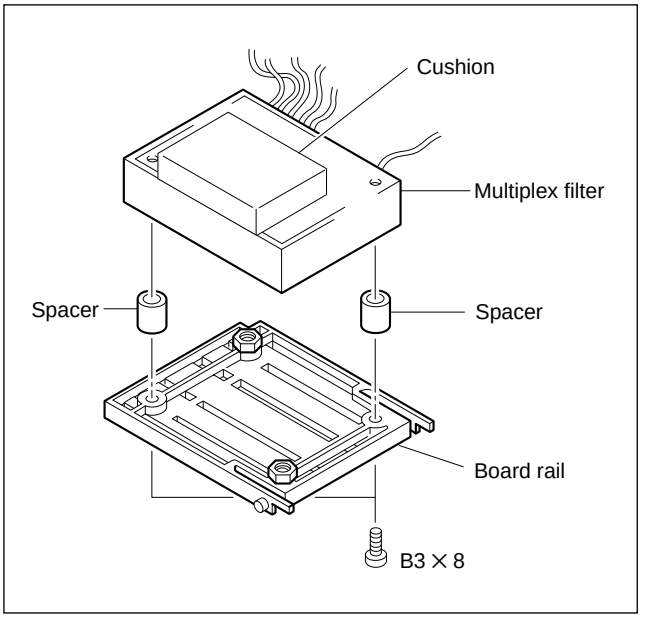
6. Disconnect CN4 from the FL-180 board.



7. Pull out the board rail while pinching both ends of rail.



8. Remove the two screws and remove the multiplex filter.



9. Install a new filter in the reverse procedures of the removal.

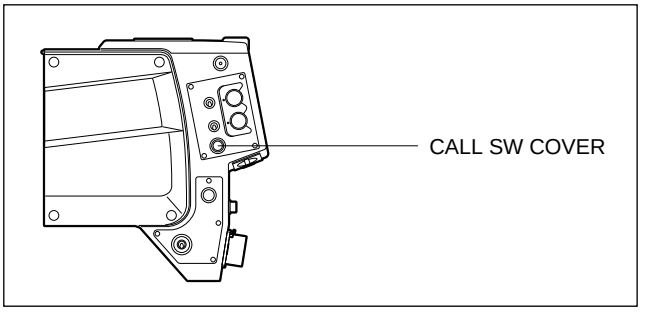
Note

In replacing the multiplex filter, replace the cushion at the same time.

2-10. Periodic Replacement Part

The CALL switch cover on the right side of the unit is a periodic replacement part. It is subject to cracks with the lapse of time. Check sometimes by visual, and replace as necessary.

Description	Sony P/N
COVER, SW	3-676-244-1X



2-11. Notes on Service

2-11-1. Description of EEPROM Data

The table below gives the holding data of EEPROM IC2 on the MB-605 board.

Board	Ref. No.	Holding data
MB-605	IC2	Model name, Serial number of the unit, Power-on time(at a rough estimate)

Note

IC2 on the MB-605 board cannot be replaced because it is the EEPROM that is holding data inherent in the unit. The part number listed in Section 4 “Spare Parts” is for an EEPROM which is not programmed. If replacement is needed, consult your Sony representatives.

2-11-2. Notes on Repair Parts

1. WARNING

Safety Related Components Warning

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts list has the present standardized repair parts.

3. Stock of Parts

Parts marked with “o” at SP(Supply Code) column of the spare parts list may be not stocked. Therefore, the delivery date will be delayed.

4. Units Representation

The following represented units are changed or omitted in writing.

Units		Representation
Capacitance	μF	uF
Inductance	μH	uH
Resistance	Ω	Abbreviation

5. Destination Representation

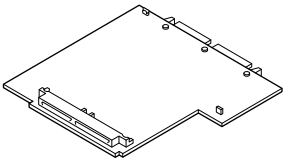
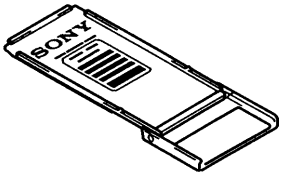
The part indicated “For J/UC/CE” in the spare parts list is used in the unit written below.

For J : The part is used in a unit for Japan.
For UC : The part is used in a unit for U.S.A. and Canada.
For CE : The part is used in a unit for regions except the above countries.

Section 3
Electrical Alignment

3-1. Preparation

3-1-1. Equipment Required

Extension board EX-464 (option)	Extension board BKP-7900 (option)
Sony P/N: J-6395-040-A For CA-550/550P plug-in boards	For CCU-700/700P plug-in boards
	

Measuring Equipment

- DC variable power supply
- Frequency counter
  Advantest TR5821AK or equivalent
- Spectrum analyzer
- Distortion meter
- Audio generator
- Oscilloscope
  Tektronix 2465 or equivalent
- Waveform monitor/Vectorscope
  Tektronix 1750 or equivalent (for NTSC)
  Tektronix 1751 or equivalent (for PAL)
- Digital voltmeter
  Advantest TR6845 or equivalent
- Video signal generator
- Color monitor
  Sony BVM-1911/2811 or equivalent (for NTSC)
  Sony BVM-2011P/3011P or equivalent (for PAL)

Peripheral Equipment

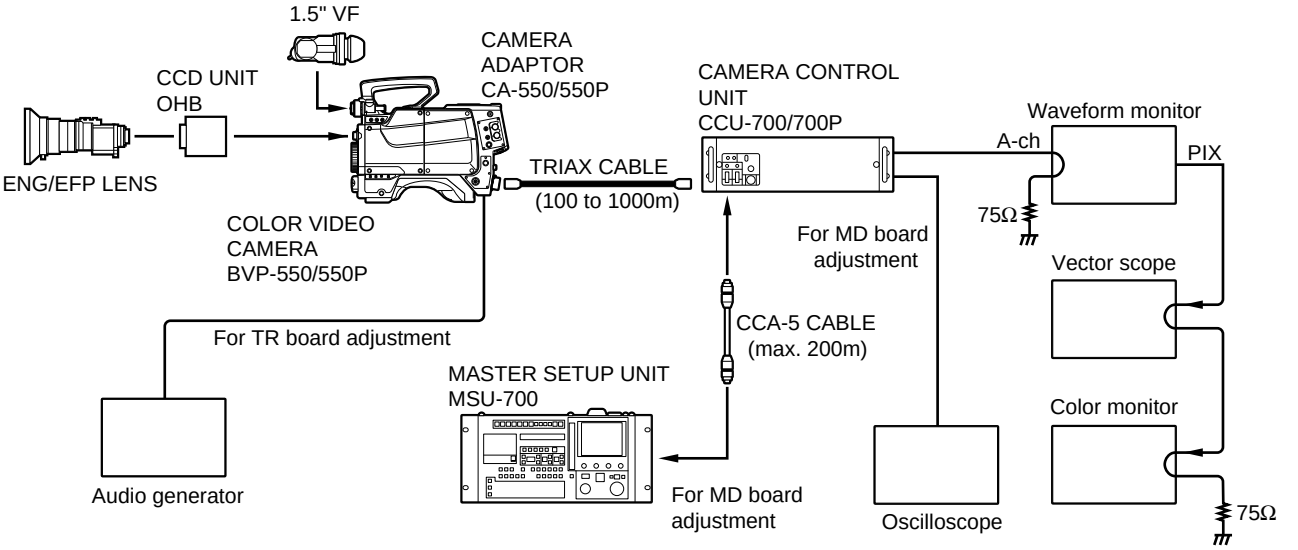
- Color video camera BVP-550/550P
- CCD unit OHB-450/451/550/550WS series
- Camera control unit CCU-700/700P/700A/700AP
- Master setup unit MSU-700
- AC adaptor AC-550/550CE
- TRIAX cable (Standard length: 150 m)

3-1-2. Notes on Adjustment

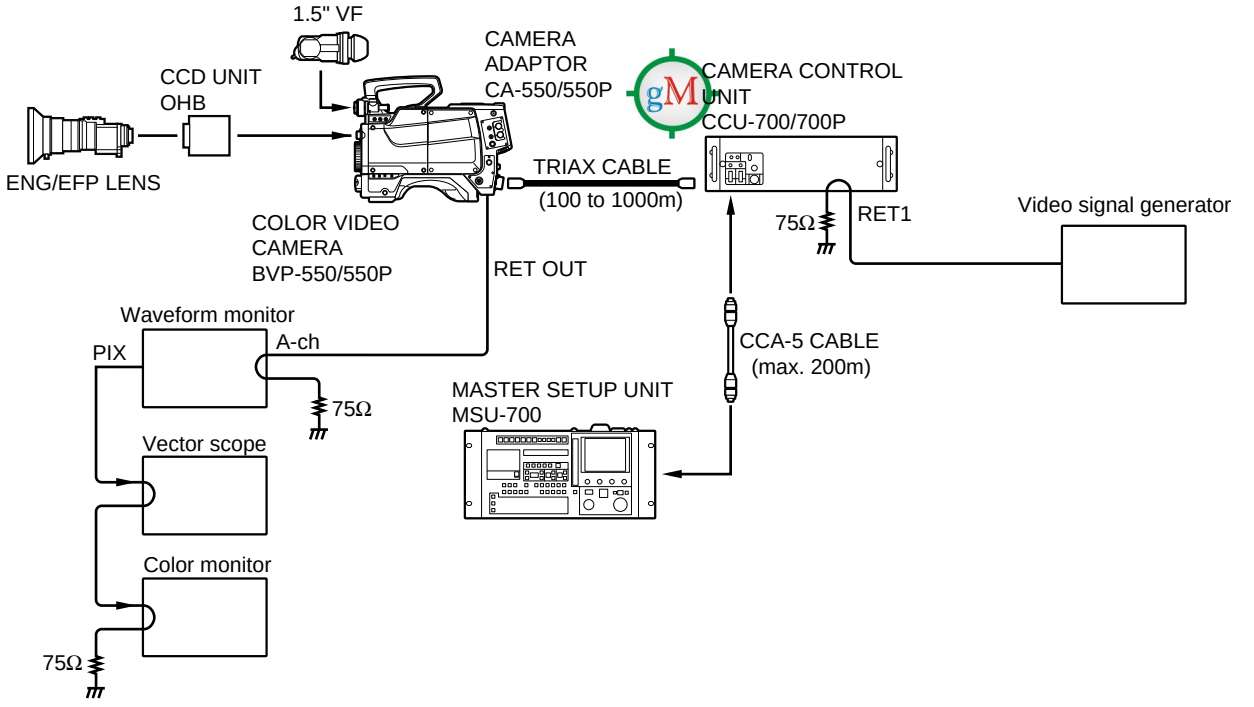
- All measuring equipment shall be calibrated.
- Also the alignments for the BVP-550/550P, OHB-450/451/550/550WS (or their PAL version), CCU-700/700P/700A/700AP, and MSU-700 shall be completed.
- To connect each equipment, refer to Section 3-1-3.
- As for initial settings before beginning adjustment, refer to Section 3-1-4.
- Close the camera lens during adjustment.
- Be sure to power off before disconnecting the printed circuit boards.
- About ten-minute warm-up time is allowed before beginning adjustment.
- Use a plastic (or ceramic) core driver to adjust ⊘LV, ⊘FL, ⊘T and so on.

3-1-3. Connection

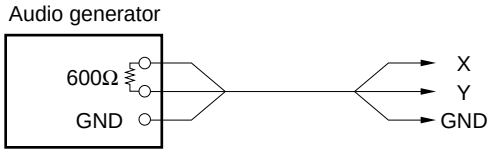
For general adjustments



For DM-98 board adjustments



For audio adjustments



3-1-4. Initial Settings

CA-550/550P

Note

When switching the following switches from a customer-set position, it is recommended to record the setting state of the customer in the table below.
After adjustment is complete, be sure to return the switches to their customer-set position.

Board	Switch	Initial setting	Customer-set position
MD-103	S3	GENLOCK	
AU-211	SW1	C (CARBON)	
	SW2-1	OFF	
	SW2-2	OFF	
	SW2-3	OFF	
	SW2-4	OFF	
	SW2-5	ON	
	SW2-6	OFF	
	SW2-7	OFF	
	SW2-8	OFF	
	SW3-1	OFF	
	SW3-2	ON	
	SW4	OFF	
	SW5	PHANTOM	
	SW6	MIC1	
DM-98	S1-1	OFF	
	S1-2	OFF	
	S1-3	OFF	
	S1-4	ON	

MSU-700 Operation Panel

- CAM POWER/Signal output select buttons
  ALL button → OFF (Stays out)
  CAM PW button → ON (Stays lit)
  TEST 1 button → OFF (Stays out)
  TEST 2 button → OFF (Stays out)
  BARS button → OFF (Stays out)
  CLOSE button → ON (Stays lit)
- CAM/CCU Function ON/OFF buttons
  KNEE OFF button → OFF (Stays lit)
  DETAIL OFF button → OFF (Stays lit)
  MATRIX OFF button → OFF (Stays lit)
  AUTO KNEE button → OFF (Stays out)
- Others
  GAMMA OFF button → ON (Stays out)
  MASTER GAIN button → 0 (0 dB)

3-2. AU-211 Board Adjustment

⊘RV1 and ⊘RV3 on the AU-211 board adjust the VTR playback audio level and side tone level respectively, and they can be set according to a customer's preference.
To output the VTR playback audio or the side tone signal, switch settings of the AU-211 board are required.
For details, refer to Section 1-4 "Function of Internal Switches—AU-211 Board".

3-2-1. BATTERY ALARM SET Adjustment

Note :

- Adjustment for ⊘RV4 is very critical. Do not turn it as far as the circuit normally activates.

Equipment : Digital voltmeter Oscilloscope
DC variable power supply

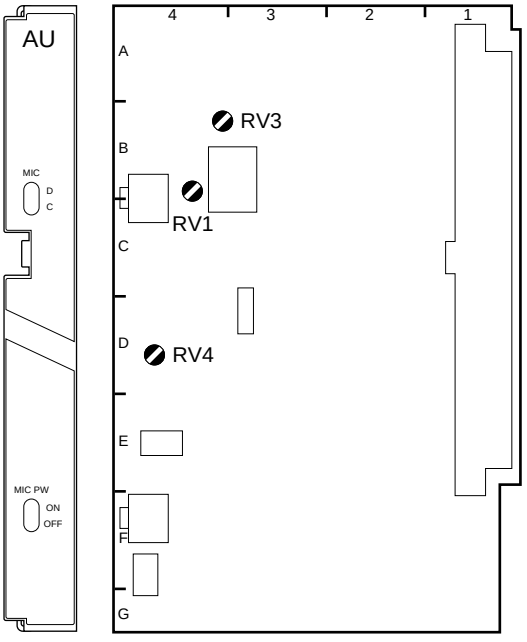
Preparation:

- Supply about +13 Vdc from the DC variable power supply via the DC IN connector.

Adjustment Point : ⊘RV4/AU-211 (D-4)

Adjustment Procedures:

1. Turn ⊘RV4 fully clockwise.
2. Measure voltage at TP84 (GND:GND A)/extension board (extending AU-211).
3. Adjust the voltage at TP84 for +11.20 ±0.05 V.
4. Slowly turn ⊘RV4 counterclockwise observing the waveform at TP42/extension board (extending AU-211) on the oscilloscope.
5. Adjust ⊘RV4 so that an 1.0-Hz, 8.0-Vp-p rectangler wave just appears.



AU-211 BOARD (COMPONENT SIDE)

3-3. TR-90 Board Adjustment

This adjustment requires longer warm-up periods (10 to 30 minutes).

3-3-1. MIC 1 RF Adjustment

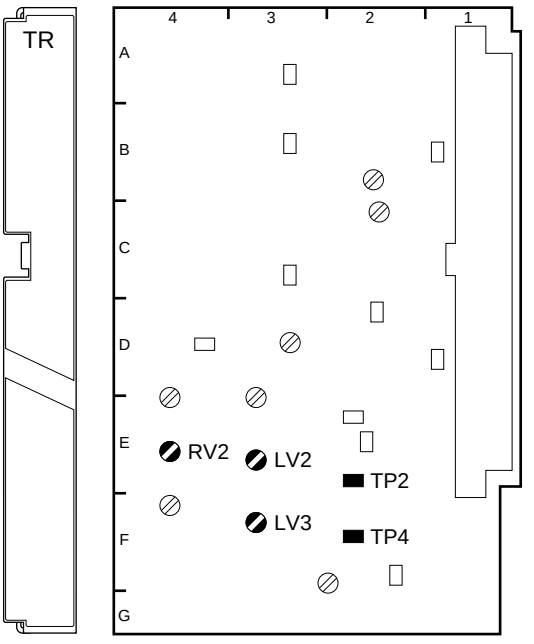
Note :
- Use a plastic core driver to adjust ⊘LV.

Equipment : Frequency counter
Test Point : TP2/TR-90 (E-2)
Adjustment Point : ⊘LV2 (6.2 MHz)/TR-90 (E-3)
Specifications : 6,200 ±5 kHz

3-3-2. MIC 2 RF Adjustment

Note :
- Use a plastic core driver to adjust ⊘LV.

Equipment : Frequency counter
Test Point : TP4/TR-90 (F-2)
Adjustment Point : ⊘LV3 (6.7 MHz)/TR-90 (F-3)
Specifications : 6,700 ±5 kHz



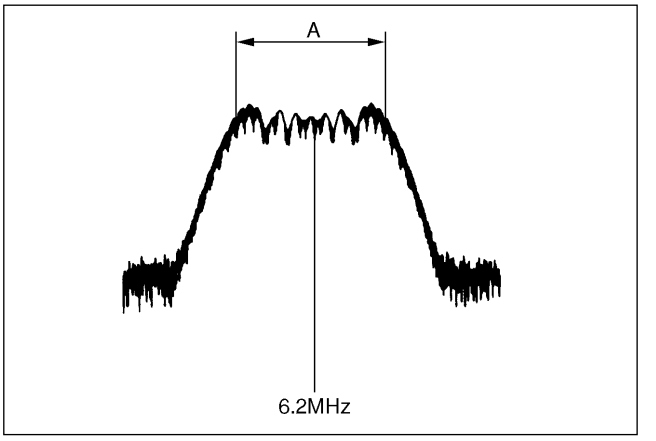
TR-90 BOARD (COMPONENT SIDE)

3-3-3. MIC 1 DEVIATION Adjustment

Equipment : Spectrum analyzer
Audio generator

Preparations :
- SW6 (MIC LINE SEL)/AU-211 (E-4) → MIC 1
- CCU-700/700P/700A/700AP setting
  S1003 (MIC LEVEL CH1)/AT-88 panel→ NORM
- Feed an 1.0-kHz, –60 dBu (2.2 mVp-p) sine wave signal from the audio generator to the MIC connector on the BVP-550/550P. (Refer to Section 3-1-3 “Connection—For audio adjustments”.

Test Point : TP2/TR-90 (E-2)
Adjustment Point : ⊘RV2 (MIC1 DEV)/TR-90 (E-4)
Specifications : A = 16.0 ±0.8 kHz



CENTER FREQ	6.2 MHz
SPAN	50 kHz
RBW	1 kHz

Note :
After the adjustment is complete, be sure to return S1003/AT-88 to its customer-set position.

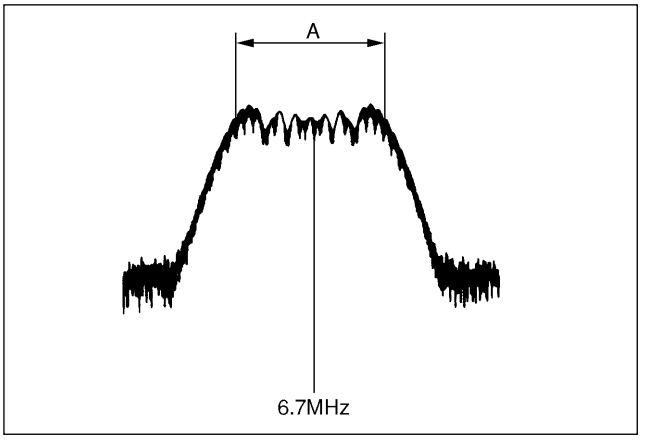
3-3-4. MIC 2 DEVIATION Adjustment

Equipment : Spectrum analyzer
Audio generator

Preparations :

- CCU-700/700P/700A/700AP setting
  S1004 (MIC LEVEL CH2)/AT-88 panel→ NORM
- Feed an 1.0-kHz, -60 dBu (2.2 mVp-p) sine wave signal from the audio generator to the MIC connector on the CA-550/550P. (Refer to Section 3-1-3 “Connection — For audio adjustments”.

Test Point : TP4/TR-90 (F-2)
Adjustment Point : ⊘RV3 (MIC2 DEV)/TR-90 (F-4)
Specifications : A = 18.0 ±0.8 kHz



CENTER FREQ	6.7 MHz
SPAN	50 kHz
RBW	1 kHz

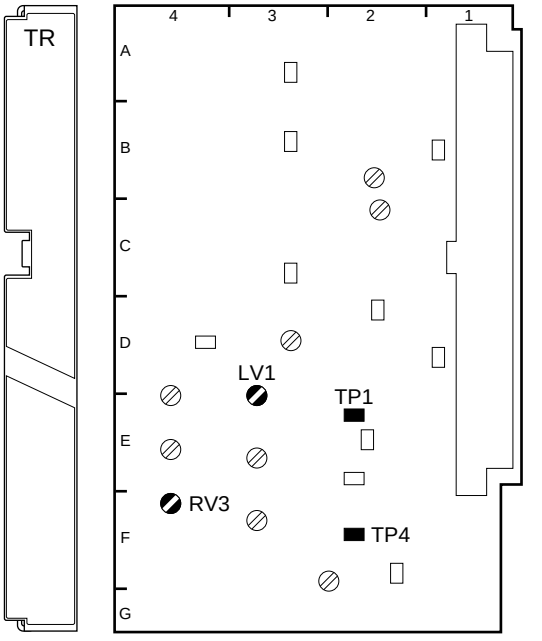
Note :
After the adjustment is complete, be sure to return S1004/ AT-88 to its customer-set position.

3-3-5. INCOM RF Adjustment

Note :

- Use a plastic core driver to adjust ⊘LV.

Equipment : Frequency counter
Test Point : TP1/TR-90 (E-2)
Adjustment Point : ⊘LV1 (7.1 MHz)/TR-90 (E-3)
Specifications : 7,100 ±5 kHz



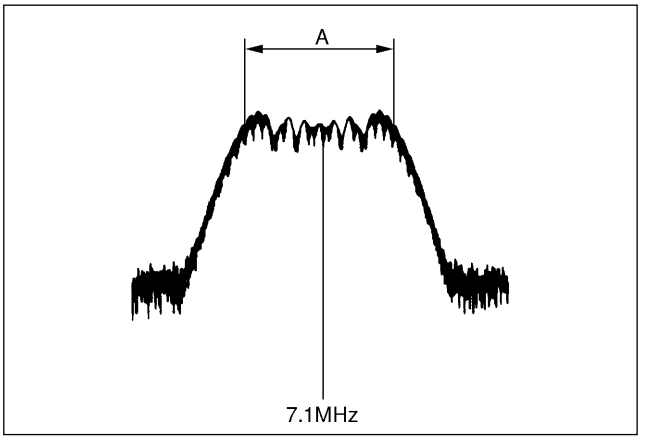
TR-90 BOARD (COMPONENT SIDE)

3-3-6. INCOM DEVIATION Adjustment

Equipment : Spectrum analyzer
Audio generator

Preparations :
- SW1 (INCOM MIC SEL)/AU-211 panel→ D
- Feed an 1.0-kHz, -60 dBu (2.2 mVp-p) sine wave signal from the audio generator to the INCOM connector on the CA-550/550P. (Refer to Section 3-1-3 “Connection — For audio adjustments”.

Test Point : TP1/TR-90 (E-2)
Adjustment Point : ⊘RV1 (INCOM DEV)/TR-90 (E-4)
Specifications : A = 20.0 ±0.8 kHz



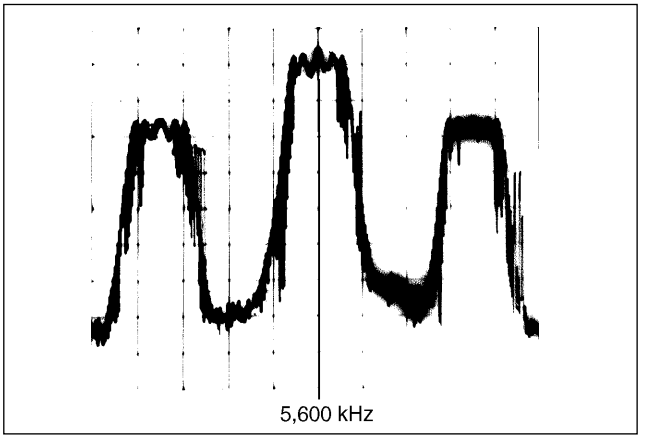
CENTER FREQ	7.1 MHz
SPAN	50 kHz
RBW	1 kHz

Note :
After the adjustment is complete, be sure to return SW1/ AU-211 to C position.

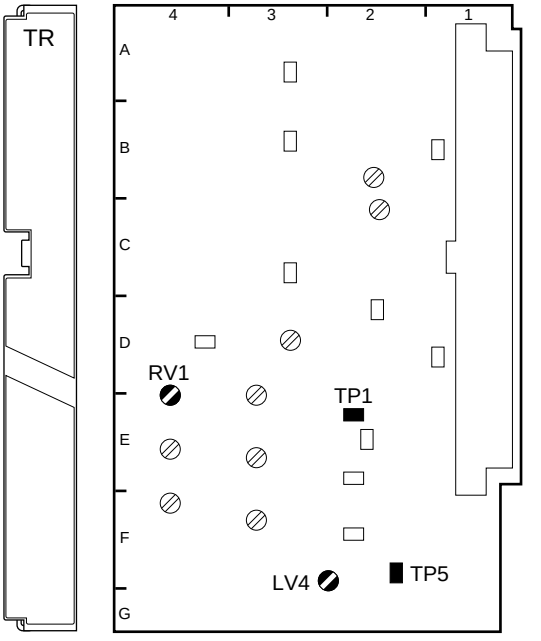
3-3-7. DATA RF Adjustment

Note :
- Use a plastic core driver to adjust ⊘LV.

Equipment : Spectrum analyzer
Test Point : TP5/TR-90 (F-2)
Adjustment Point : ⊘LV4 (5.6 MHz)/TR-90 (F-2)
Specifications : Center frequency 5,600 ±5 kHz



CENTER FREQ	5,600 kHz
SPAN	100 kHz
RBW	1 kHz



TR-90 BOARD (COMPONENT SIDE)

http://getMANUAL.com

3-3-8. INCOM Demodulation Adjustment

Notes:

- This adjustment is necessary only when replacing T202 or T203 on the TR-90 board.
- Use a plastic core driver to adjust ⊘T.

Equipment : Oscilloscope Audio generator
Distortion meter

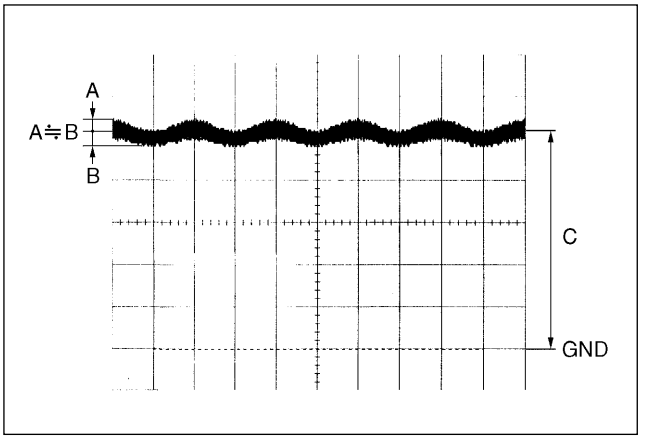
Preparations :

- INCOM level control/at the right-rear→ ↻fully clock-wise
- CCU-700/700P/700A/700AP setting
  Extend the AT-88 board of the CCU.
  S2081 (PGM IN 0 dB/-20 dB)/AT-88 (D-5)→ 0dB
  S2082 (PGM MIX ON/OFF)/AT-88 (F-5)→ ON

Test Point : Pin 4 (X), Pin 3 (G)/
INCOM connector

Adjustment Procedures:

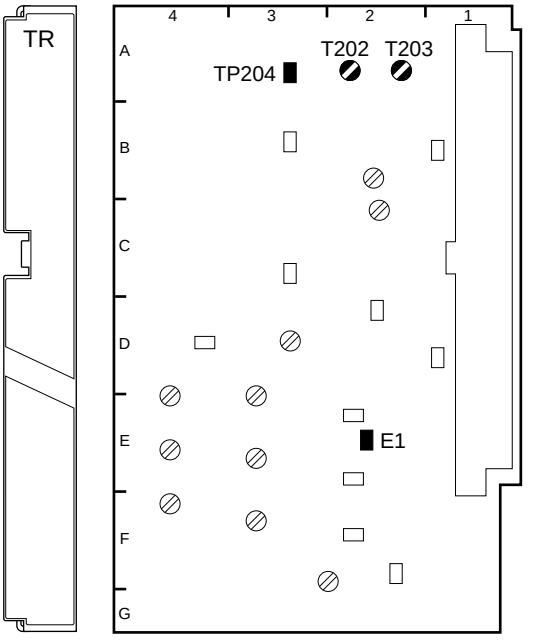
1. Feed an 1.0-kHz sine wave signal from the audio generator to pins D68 (X), A69 (Y), and B69 (GND) on the extension board (extending AT-88) referring to Section 3-1-3 “Connection — For audio adjustments”.
2. Adjust the audio generator so that the level at TP44 (GND:E1)/AT-88 (L-7) is 200 mVp-p.
3. Connect the oscilloscope to TP204 (GND:E1)/TR-90 (A-3).
4. Slowly turn ⊘T202 (A-2) until a sign wave appears around 5.0 Vdc. Adjust ⊘T202 for the following specifications.
   Adjustment Point : ⊘T202/TR-90 (A-2)
   Specifications : C = 5.0 ±0.1 Vdc



5. **Adjustment Point** : ⊘T203/TR-90 (A-2)
   Specifications : The distortion is 0.3% or less and minimum.

Note :

- After the adjustment is complete, be sure to return S2081 and S2082/AT-88 to their customer-set positions.



TR-90 BOARD (COMPONENT SIDE)

3-3-9. PGM Demodulation Adjustment

Note :

- This adjustment is necessary only when replacing T200 or T201 on the TR-90 board.
- Use a plastic core driver to adjust ⊘T.

Equipment : Oscilloscope Audio generator
Distortion meter

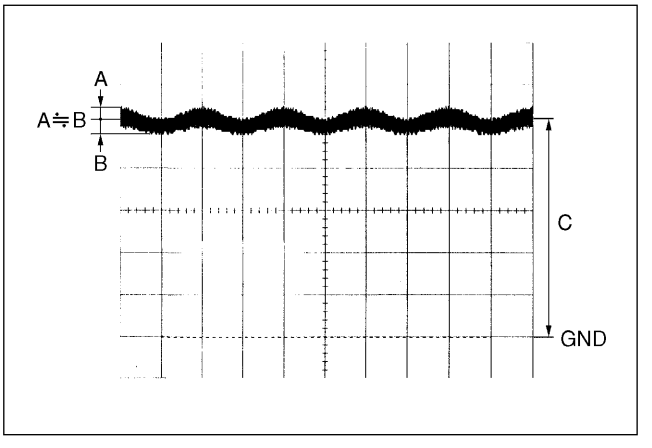
Preparations :

- PGM level control/at the right-rear→ ↺fully clockwise
- CCU-700/700P/700A/700AP setting
  Extend the AT-88 board of the CCU.
  S2081 (PGM IN 0 dB/-20 dB)/AT-88 (D-5)→ 0dB
  S2082 (PGM MIX ON/OFF)/AT-88 (F-5)→ OFF

Test Point : Pin 5 (X), Pin 3 (G)/
INCOM connector

Adjustment Procedures:

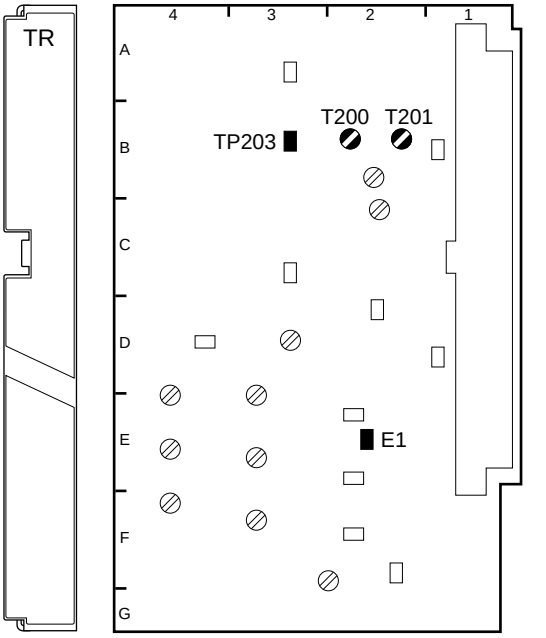
1. Feed an 1.0-kHz sine wave signal from the audio generator to pins D68 (X), A69 (Y), and B69 (GND) on the extension board (extending AT-88) referring to Section 3-1-3 “Connection — For audio adjustments”.
2. Adjust the audio generator so that the level at TP44 (GND:E1)/AT-88 (L-7) is 200 mVp-p.
3. Connect the oscilloscope to TP203 (GND:E1)/TR-90 (B-3).
4. Slowly turn ⊘T200 (B-2) until a sign wave appears around 5.0 Vdc. Adjust ⊘T200 (B-2) for the following specifications.
   Adjustment Point : ⊘T200/TR-90 (A-2)
   Specifications : C = 5.0 ±0.1 Vdc



5. **Adjustment Point** : ⊘T201/TR-90 (B-2)
   Specifications : The distortion is 0.3% or less and minimum.

Note :

- After the adjustment is complete, be sure to return S2081 and S2082/AT-88 to their customer-set positions.



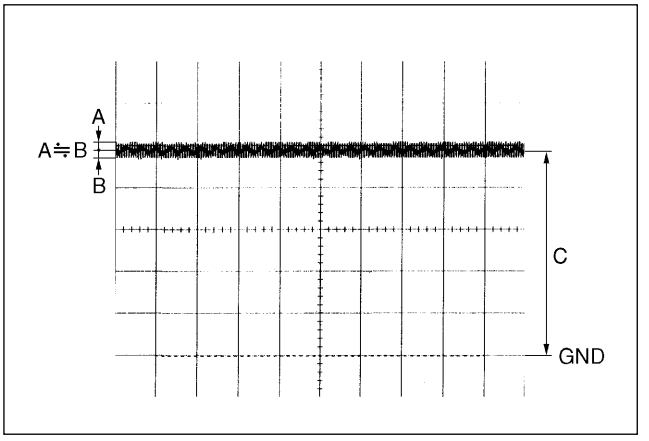
TR-90 BOARD (COMPONENT SIDE)

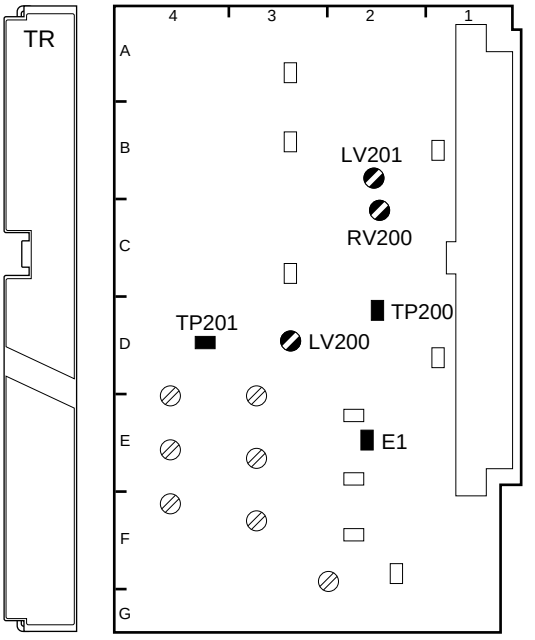
3-3-10. DATA Demodulation Circuit Adjustment

Note :

- Use a plastic core driver to adjust ⊘LV.

Equipment : Oscilloscope
Test Point : TP201 (GND:E1)/TR-90 (D-4)
Adjustment Point : ⊘LV200/TR-90 (D-3)
Specifications : C = 4.9 ±0.1 V





TR-90 BOARD (COMPONENT SIDE)

3-3-11. H CONT Demodulation Circuit Adjustment

Note :

- Use a plastic core driver to adjust ⊘LV.

Equipment : Digital voltmeter or Oscilloscope
DC variable power supply
Frequency counter

Preparations :

- Set the POWER switch of the CA-550/550P to OFF.
- CCU-700/700P/700A/700AP setting
  Extend the AT-88 board of the CCU.
  Supply +2.5 Vdc to pin C19 (GND:E1)/extension board (extending AT-88) from the DC variable power supply.
  Observing the frequency counter, adjust the DC variable power supply so that the frequency at TP1 (GND:E2)/ AT-88 (G-7) is 2.500 ±0.005 MHz.

Test Point : TP81/extension board
(extending TR-90)

Adjustment Procedures:

1. Set the POWER switch to CCU/EXT.
2. Connect between TP59 and TP90/extension board (extending TR-90).
3. **Adjustment Point** : ⊘LV201/TR-90 (B-2)
   Specifications : 2.5 ±0.2 V.
4. Disconnect TP90 and connect between TP59 and GND A.
5. **Adjustment Point** : ⊘RV200/TR-90 (C-2)
   Specifications : 2.5 ±0.2 V

3-4. MD-103 Board Adjustment

This adjustment requires a completely-aligned MSU-700. Refer to Section 3-1-3 and 3-1-4 for connection and initial settings.

3-4-1. VCO 45 MHz Adjustment

Note :
- This adjustment requires longer warm-up periods (10 to 30 minutes).

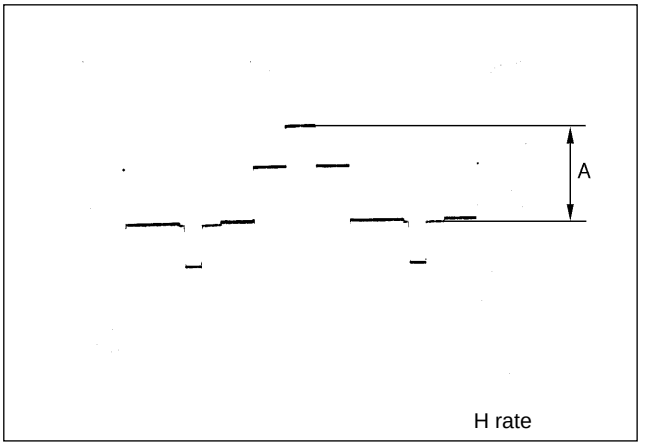
Equipment : Frequency counter
Test Point : TP9 (GND:E1)/MD-103 (F-2)
Adjustment Point : ⊘RV13 (VCO ADJ)/MD-103 (F-3)
Specifications : 45, 000, 000 ±10 Hz

3-4-2. Y Level Adjustment

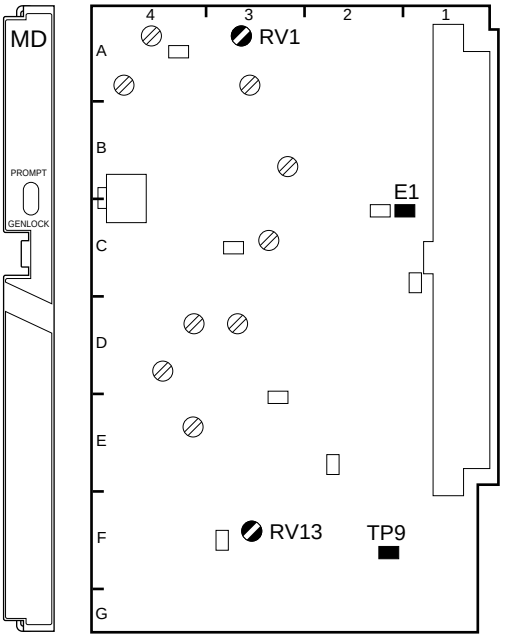
Equipment : Oscilloscope

Preparation:
- Setting of MSU-700 operation panel
  TEST 2 button→ ON (Lights)

Test Point : TP61 (GND:TP59)/extension board (extending MD-103)
Adjustment Point : ⊘RV1 (VTR Y LVL)/ MD-103 (A-3)
Specifications : A = 1400 mV ±2%



Note :
- After the adjustment is complete, be sure to turn off the TEST 2 button of MSU-700.



MD-103 BOARD (COMPONENT SIDE)

3-4-3. Y SYNC Cancel Adjustment

Equipment : Oscilloscope

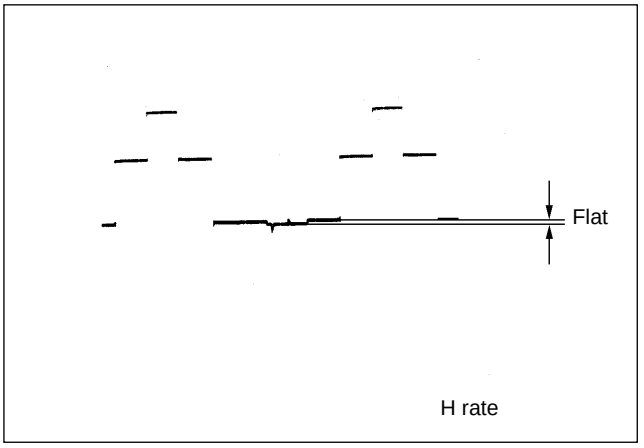
Preparation :

- Setting of MSU-700 operation panel
  TEST 2 button→ ON (Lights)

Test Point : TP1 (GND:E1)/MD-103 (C-3)
Adjustment Point : ⊘RV2 (SYNC CANCEL)/
MD-103 (A-3)

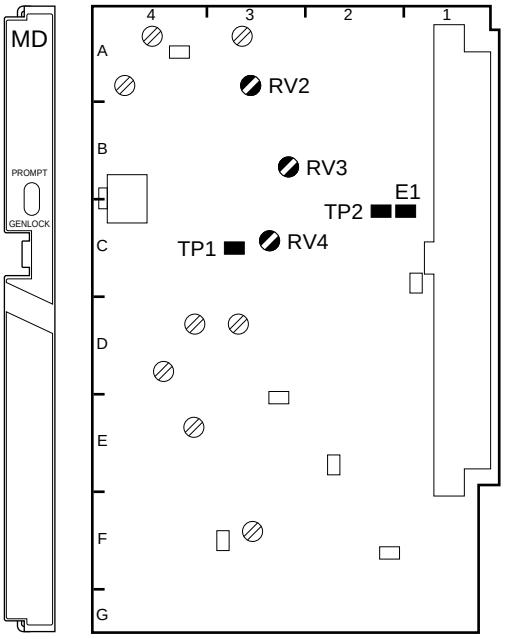
Adjustment Procedures :

Adjust ⊘RV2 so that the H SYNC portion is flat.



Note :

- After the adjustment is complete, be sure to turn off the TEST 2 button of MSU-700.



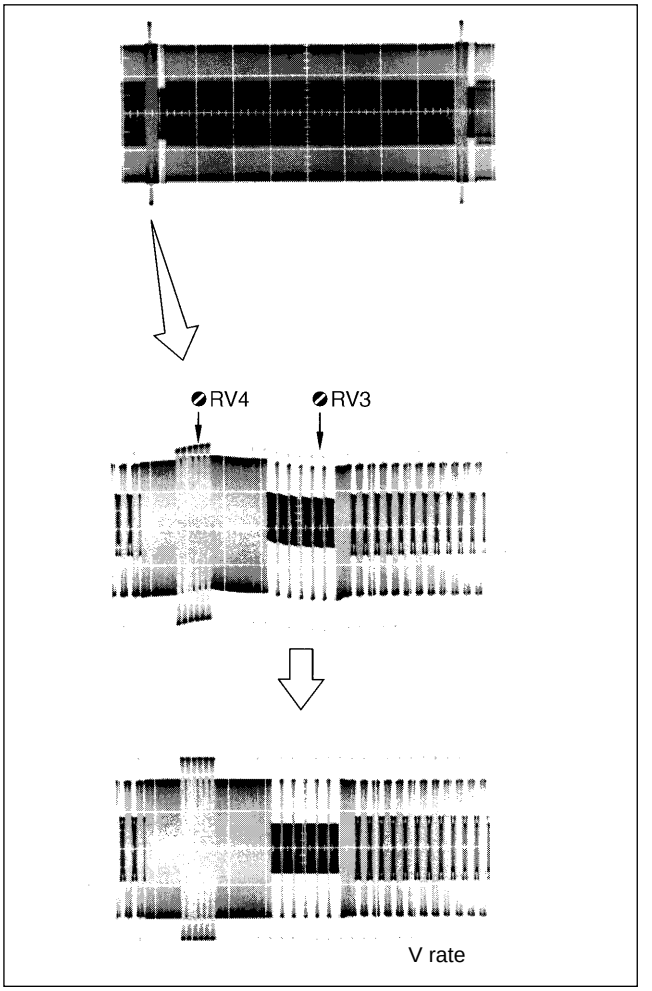
MD-103 BOARD (COMPONENT SIDE)

3-4-4. Y/SKIN DC Balance Adjustment

Equipment : Oscilloscope (LIMITER→ OFF)
Test Point : TP2 (GND:E1)/MD-103 (C-2)
Trigger : SYNC OUTPUT connector/
CCU rear panel
Adjustment Points : ⊘RV3 (Y DC BAL)/MD-103 (B-3)
⊘RV4 (SKIN DC BAL)/MD-103 (C-3)

Adjustment Procedure :

Adjust ⊘RV3 and ⊘RV4 alternately until the V SYNC portions are flat.



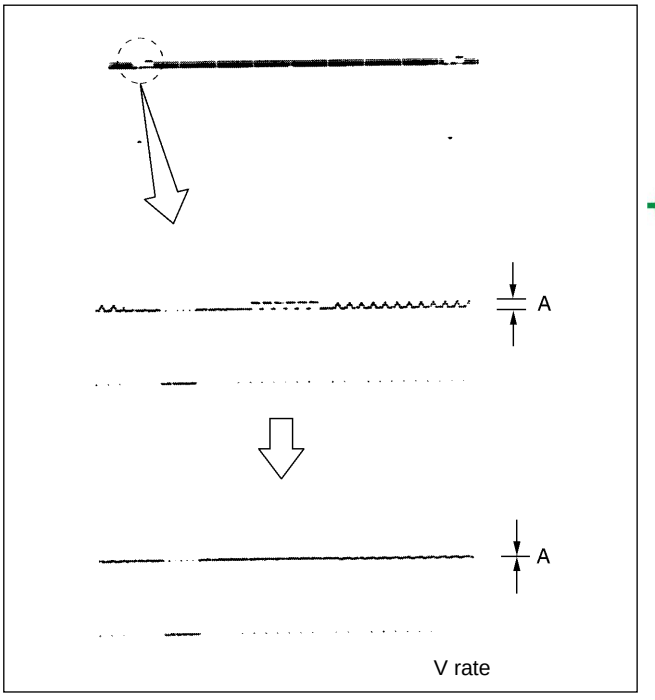
3-4-5. Y/SKIN 90° Adjustment

Notes:
- This adjustment is necessary only when replacing FL2 on the MD-103 board.
- Use a plastic core driver to adjust ⊘FL.

Equipment : Oscilloscope

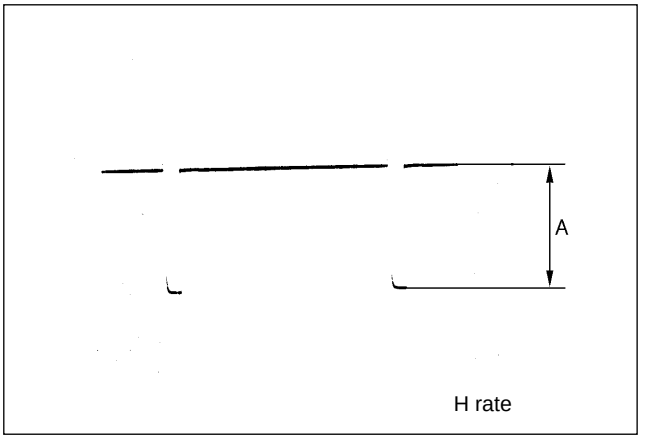
Preparation:
- CCU-700/700P/700A/700AP setting
  Extend the DM-94 board of the CCU.

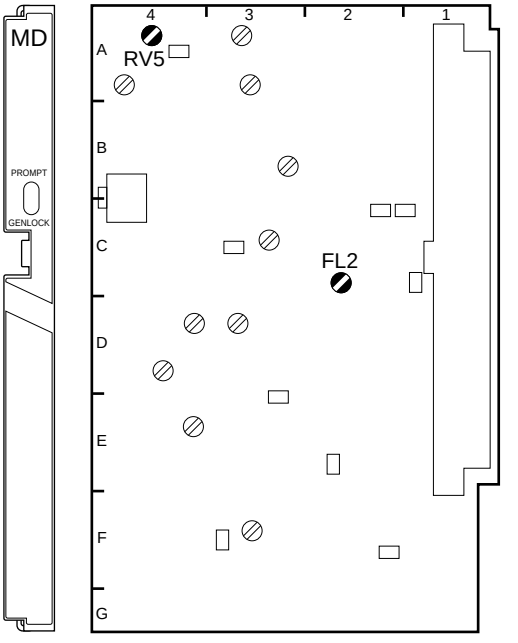
Test Point : TP26 (GND:E5)/DM-94 (F-8)
Trigger : SYNC OUTPUT connector/ CCU rear panel
Adjustment Point : ⊘FL2/MD-103 (C-2)
Specifications : A = 0 ±2 mV



3-4-6. R-Y Level Adjustment

Equipment : Oscilloscope
Test Point : TP63 (GND:TP65)/extension board (extending MD-103)
Adjustment Point : ⊘RV5 (VTR R-Y LVL)/ MD-103 (A-4)
Specifications : A = 700 ±14 mV

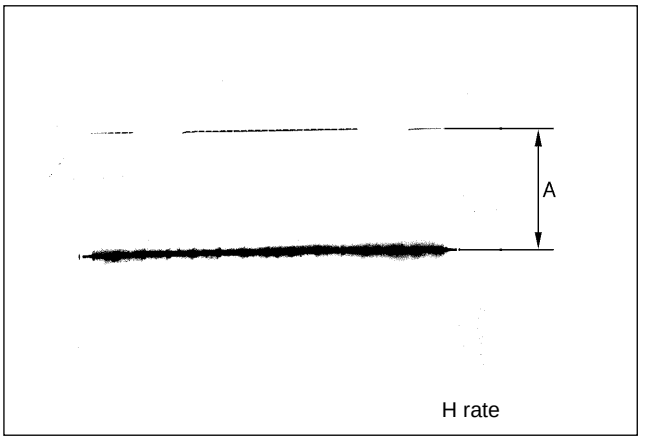




MD-103 BOARD (COMPONENT SIDE)

3-4-7. B-Y Level Adjustment

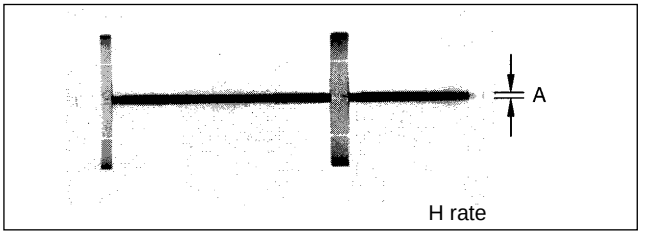
Equipment : Oscilloscope
Test Point : TP67 (GND:TP69)/extension board (extending MD-103)
Adjustment Point : ⊘RV9 (VTR B-Y LVL)/ MD-103 (A-4)
Specifications : A = 700 ±14 mV

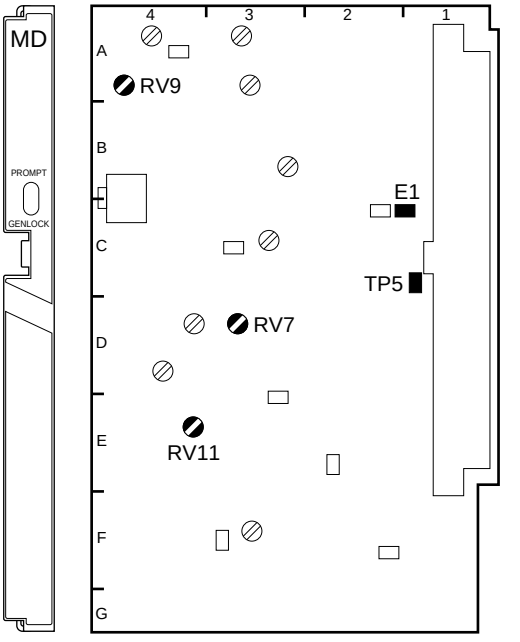


3-4-8. R-Y/B-Y Carrier Balance Adjustment

Equipment : Oscilloscope (LIMITER→ OFF)
Test Point : TP5 (GND:E1)/MD-103 (C-1)
Adjustment Points : ⊘RV7 (R-Y CAR BAL)/MD-103 (D-3)
⊘RV11 (B-Y CAR BAL)/MD-103 (E-4)

Adjustment Procedure :
Adjust ⊘RV7 and ⊘RV11 alternately so that the amplitude "A" is minimum.



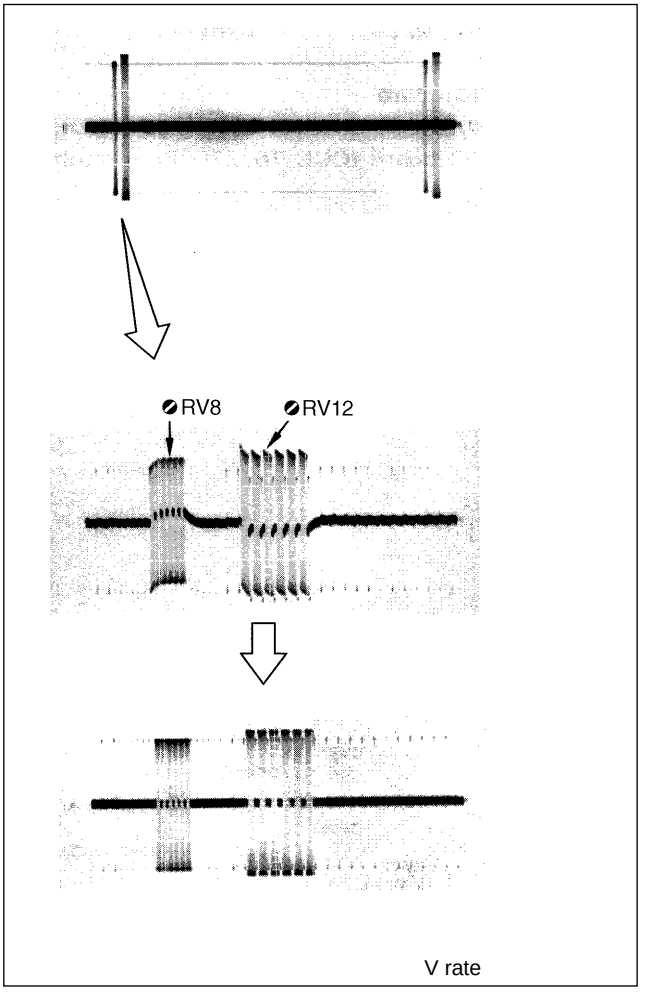


MD-103 BOARD (COMPONENT SIDE)

3-4-9. R-Y/B-Y DC Balance Adjustment

Equipment : Oscilloscope (LIMITER→ OFF)
Test Point : TP5 (GND:E1)/MD-103 (C-1)
Adjustment Points : ⊘RV8 (R-Y DC BAL)/MD-103 (D-4)
⊘RV12 (B-Y DC BAL)/MD-103 (D-4)

Adjustment Procedure :
Adjust ⊘RV8 and ⊘RV12 alternately so that the V BLKG portions are flat.



3-4-10. R-Y/B-Y 90° Adjustment

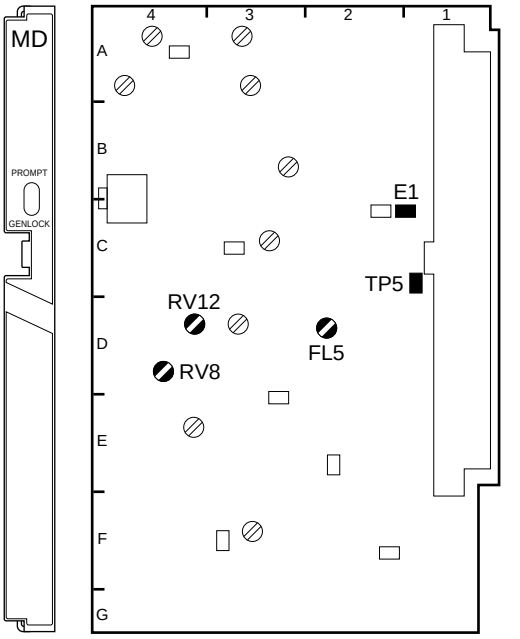
Notes:
- This adjustment is necessary only when replacing FL5 on the MD-103 board.
- Use a plastic core driver to adjust ⊘FL.

Equipment : Digital voltmeter or Oscilloscope (DC mode)

Preparation:
- CCU-700/700P/700A/700AP setting
  Extend the DM-94 board of the CCU.

Test Point : TP14 (GND:E12)/DM-94 (K-5)
Adjustment Point : ⊘FL5/MD-103 (D-2)

Adjustment Procedure :
Adjust ⊘FL5 so that a negative absolute value of DC voltage is maximum.
The voltage changes slowly. When reading the value, allow for 2 or 3 seconds after turning ⊘FL5.



MD-103 BOARD (COMPONENT SIDE)

3-4-11. 67.5 MHz TRAP Adjustment

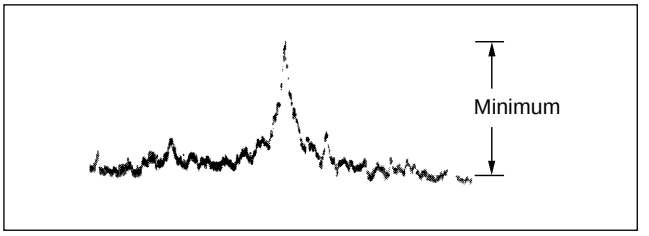
Notes:

- This adjustment is necessary only when replacing FL3 on the MD-103 board.
- Use a plastic core driver to adjust ⊘FL.

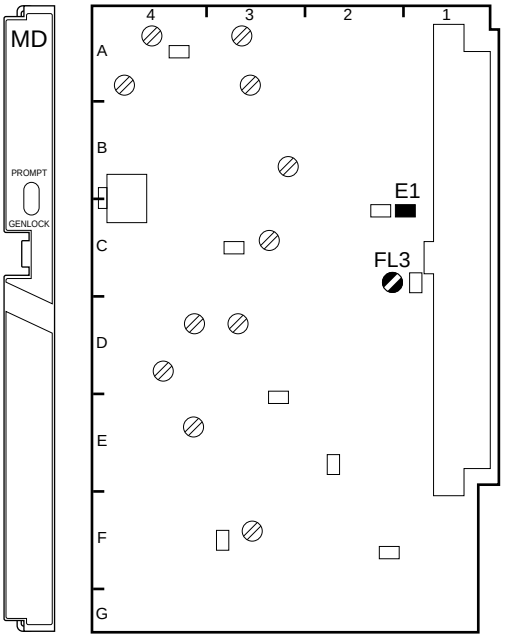
Equipment : Spectrum analyzer
Test Point : Pin 53 (GND:E1/MD-103)/ extension board (extending MD-103)
Adjustment Point : ⊘FL3 (67.5 MHz TRAP)/ MD-103 (C-2)

Adjustment Procedure :

Adjust ⊘FL3 so that the signal level around 67.5 MHz is minimum.



CENT FREQ	67.5 MHz
SPAN	2.0 MHz



MD-103 BOARD (COMPONENT SIDE)

3-5. DM-98 Board Adjustment

This adjustment requires a completely-aligned MSU-700. Refer to Section 3-1-3 and 3-1-4 for connection and initial settings.

3-5-1. RETURN VIDEO Demodulation Adjustment

Notes:

- This adjustment is necessary only when replacing the DM-98 board, or replacing LV1 or LV2 on the board.
- Use a plastic core driver to adjust ⊘LV.
- Use a TRIAX cable whose length is 300 to1000 m for this adjustment.

Equipment : Waveform Monitor Vectorscope
Video Signal Generator
(provides a 10-step signal with CHROMA signal)

Preparations :

- Set S1-1 to S1-4 /DM-98 (D-2) to all OFF.
- Feed the10-step signal from the video signal generator to the RET 1 IN connector on the CCU rear panel.

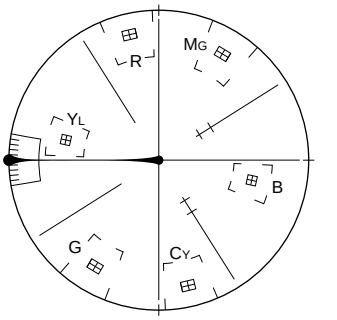
Test Point : RET OUT connector/
CA-550/550P

Adjustment Points : ⊘LV1 (RET FREQ)/DM-98 (B-1)
⊘LV2 (RET TUNE)/DM-98 (C-6)

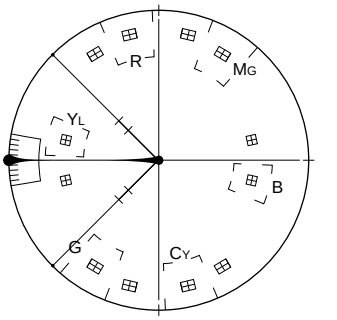
Adjustment Procedures :

1. Temporarily adjust ⊘LV2 (C-6) so that the waveform appears observing the waveform monitor.
2. Adjust ⊘LV1 (B-1) so that the values of DG and DP are minimum observing the vectorscope.
3. Slightly turn ⊘LV2 so that they are further minimum.
4. Adjust ⊘LV1 and ⊘LV2 alternately until the specifications are satisfied.

Specifications : DG = ±3%, DP = ±3°



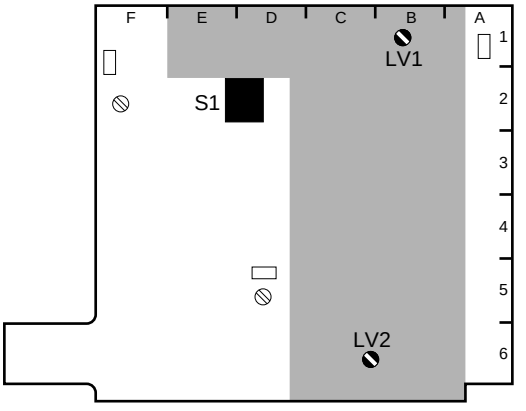
(For NTSC)



(For PAL)

Note :

- After the adjustment is complete, set S1-4/DM-98 to ON.



DM-98 BOARD (COMPONENT SIDE)

http://getMANUAL.com

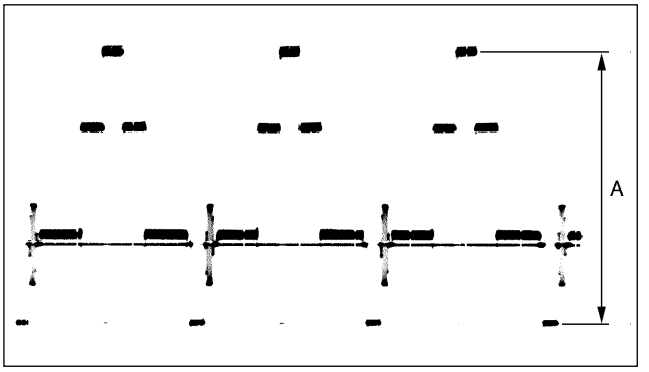
3-5-2. VBS/MONITOR Level Adjustment

Equipment : Waveform monitor

Preparations :

- Set S1-1, S1-3 and S1-4/DM-98 (D-2) to OFF, and set S1-2 (D-2) to ON.
- Setting of MSU-700 operation panel
  TEST 2 button→ ON (Lights)
  GAMMA OFF button→ ON (Stays out)

Test Point : RET OUT connector/CA-550/550P
Adjustment Point : ⊘RV2 (RET OUT)/DM-98 (F-2)
Specifications : A = 1.00 ±0.05 Vp-p



Notes:

- After the adjustment is complete, confirm that the specifications in Step 3-5-3 “RETURN VIDEO Level Adjustment” are satisfied and carry out Step 3-5-3 if necessary.
- Be sure to set S1-4/DM-98 to ON, and S1-2 to OFF.
- Be sure to turn off the TEST 2 button of MSU-700.

3-5-3. RETURN VIDEO Level Adjustment

Notes:

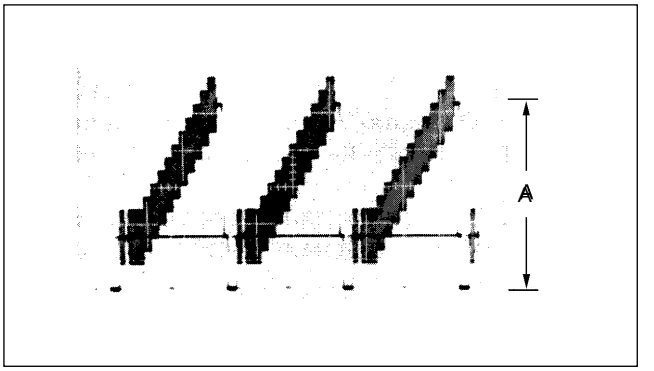
- This adjustment is necessary only when replacing the DM-98 board.
- Confirm that the specifications in Step 3-5-2 “VBS MONITOR Adjustment” are satisfied.
- Use a TRIAX cable whose length is 1000 m or less for this adjustment.

Equipment : Waveform monitor
Video signal generator
(provides a 10-step signal)

Preparations :

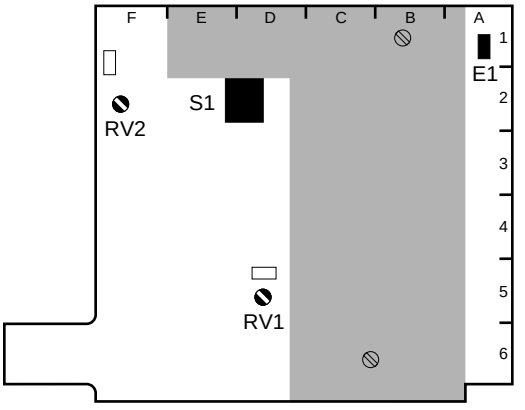
- Set S1-1 to S1-4/DM-98 (D-2) to all OFF.
- Feed the10-step signal from the video signal generator to the RET 1 IN connector on the CCU rear panel.

Test Point : RET OUT connector/CA-550/550P
Adjustment Point : ⊘RV1 (RET LEVEL)/DM-98 (D-5)
Specifications : A = 1.00 ±0.05 Vp-p



Note :

- After the adjustment is complete, set S1-4/DM-98 to ON.



DM-98 BOARD (COMPONENT SIDE)

Section 4
Spare Parts

4-1. Notes on Repair Parts

1. WARNING Safety Related Components Warning

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts list has the present standardized repair parts.

3. Stock of Parts

Parts marked with “o” at SP (Supply Code) column of the spare parts list may be not stocked. Therefore, the delivery date will be delayed.

4. Units Representation

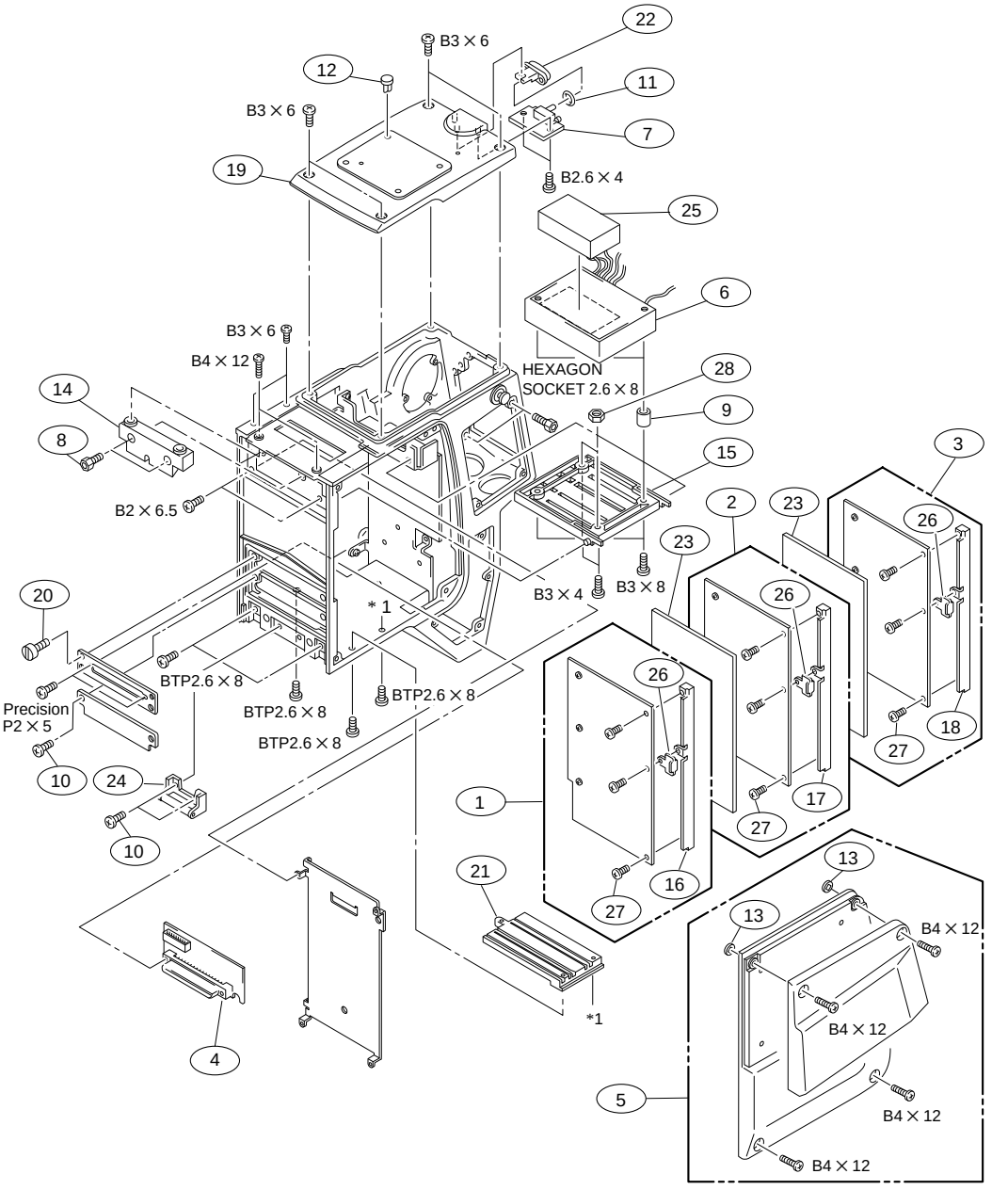
The following represented units are changed or omitted in writing.

Units		Representation
Capacitance	μF	uF
Inductance	μH	uH
Resistance	Ω	Abbreviation

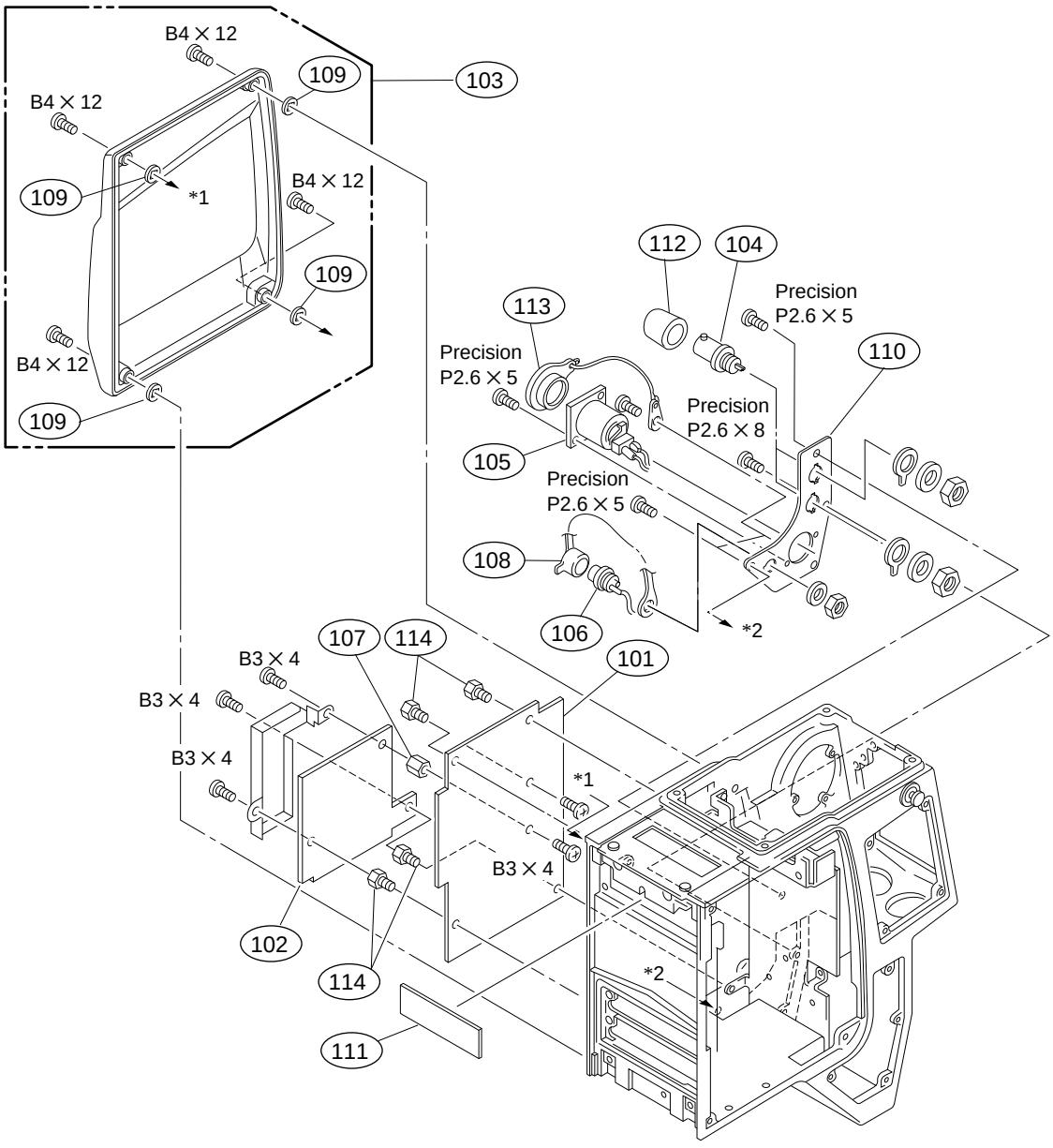
5. Destination Representation

The part indicated “For J/UC/CE” in the spare parts list is used in the unit written below.
For J : The part is used in a unit for Japan.
For UC : The part is used in a unit for U.S.A. and Canada.
For CE : The part is used in a unit for regions except the above countries.

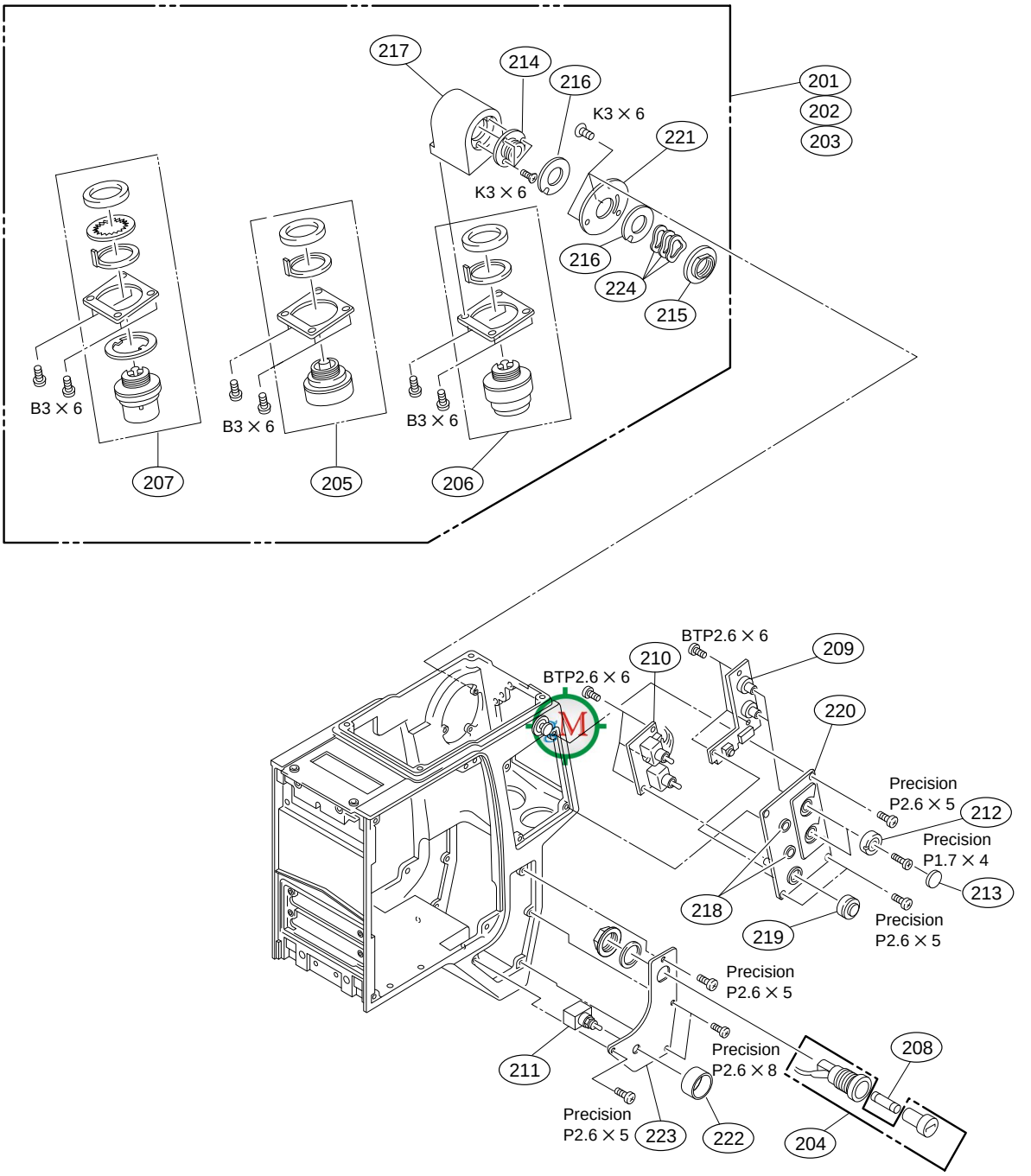
4-2. Exploded Views



No.	Part No.	SP	Description
1	A-8272-582-A	o	MOUNTED CIRCUIT BOARD, MD-103
2	A-8272-584-A	o	MOUNTED CIRCUIT BOARD, AU-211
3	A-8272-586-A	o	MOUNTED CIRCUIT BOARD, TR-90
4	A-8272-596-A	o	MOUNTED CIRCUIT BOARD, CN-1190
5	X-3678-482-1	o	PANEL ASSY, RIGHT
6	1-239-963-42	s	FILTER, MPX
7	1-657-765-21	o	PRINTED CIRCUIT BOARD, LP-87
8	2-623-773-11	s	BOLT, (M3X8)STAINLESS
9	3-002-407-06	s	COLLOR
10	3-165-162-01	s	SCREW, PRECISION (P2.6X5)(TYPE1)
11	3-326-148-01	o	PACKING (A)
12	3-673-018-11	s	SCREW, BLIND
13	3-687-116-01	o	WASHER (4), STOPPER
14	3-692-113-11	o	WEDGE,HANGER
15	3-692-117-02	o	RAIL
16	3-692-161-02	o	PANEL,MD-103 PC BOARD
17	3-692-162-02	o	PANEL,AU-211 PC BOARD
18	3-692-163-02	o	PANEL,TR-90 PC BOARD
19	3-692-169-11	o	PANEL,TOP
20	3-692-174-02	s	SCREW,FLOATING
21	3-692-175-01	o	RAIL,CA
22	3-692-181-01	o	COVER,TALLY
23	3-692-642-02	o	SHEET,SHIELD
24	3-692-650-03	o	PLATE,LOCK
25	3-693-982-01	s	CUSHION(MPX)
26	3-724-753-01	o	RING
27	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
28	3-942-866-01	s	NUT(M3)(3X0.5), NYLON

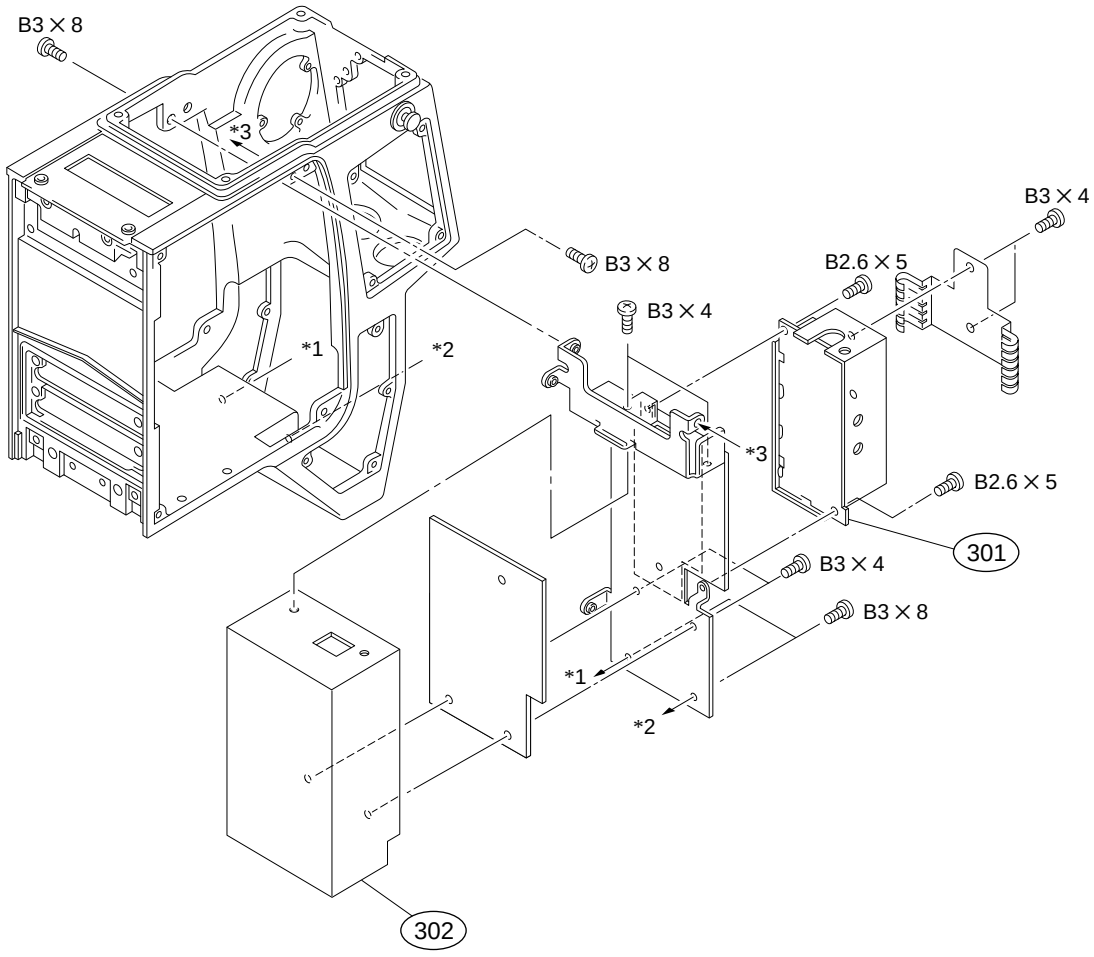


No.	Part No.	SP	Description
101	A-8272-593-A	o	MOUNTED CIRCUIT BOARD, MB-605
102	A-8272-580-A	o	MOUNTED CIRCUIT BOARD, DM-98
103	X-3678-483-1	o	PANEL ASSY,LEFT
104	1-561-781-11	s	CONNECTOR, BNC "PROMPT/GENLOCK""RET OUT"
105	1-564-603-11	s	CONNECTOR(W/ DC SW)4P MALE "DC IN"
106	1-565-072-11	s	CONNECTOR, 4P FEMALE "DC OUT"
107	2-280-622-01	o	SUPPORT (M3), HEXAGON
108	3-685-115-01	s	CAP (6P), DROP PROTECTION
109	3-687-116-01	o	WASHER (4), STOPPER
110	3-692-171-11	o	PLATE,CONNECTOR(BNC)
111	3-692-187-02	o	PLATE,PROTECTION
112	3-717-823-01	s	COVER, BNC
113	3-741-726-01	o	CAP (2), XLR
114	4-924-260-01	o	BOSS (D)



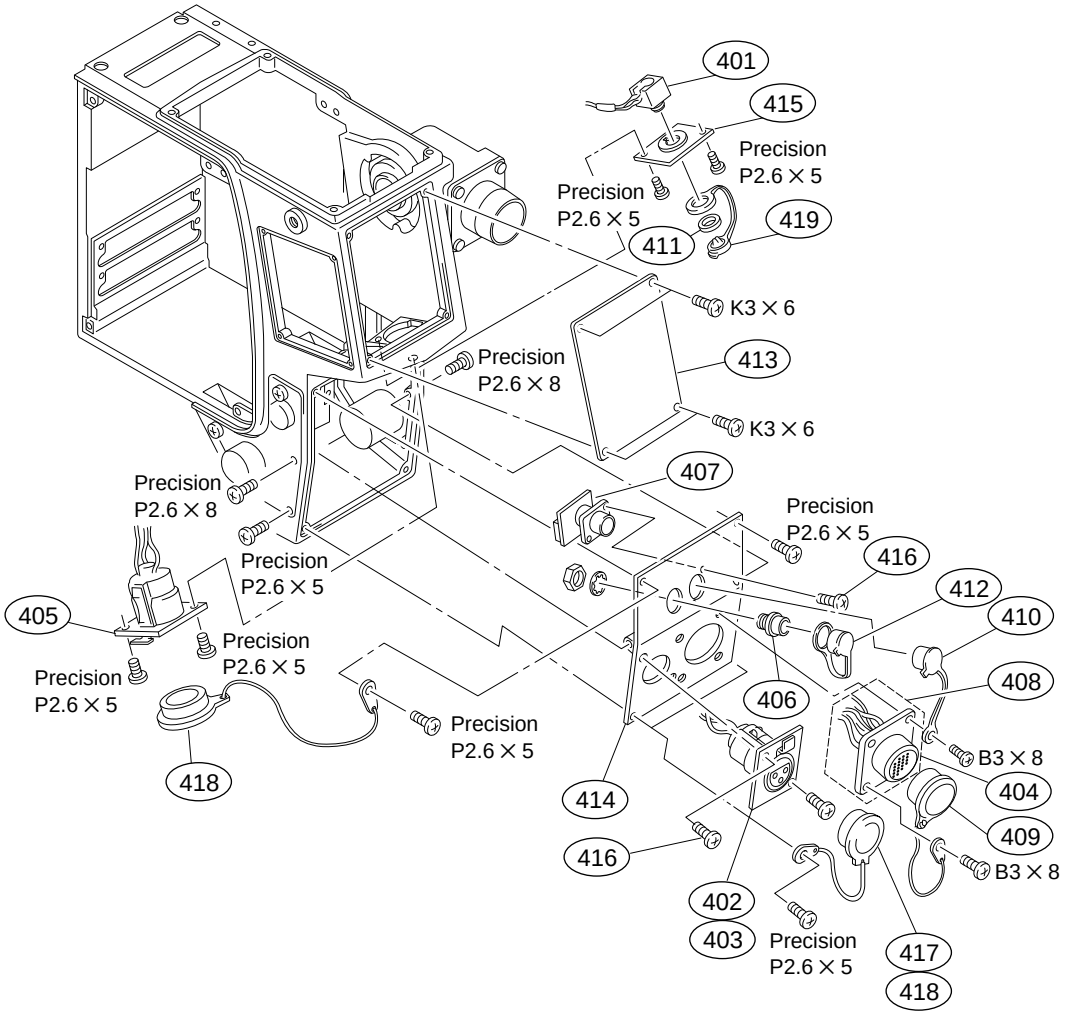
No.	Part No.	SP	Description
201	⚠ A-8272-609-A	o	TRIAX ASSY (J)
202	⚠ A-8272-574-A	o	TRIAX ASSY (UC)
203	⚠ A-8272-612-A	o	TRIAX ASSY (CE)
204	⚠ 1-533-191-11	s	HOLDER, FUSE
205	⚠ 1-561-844-00	s	CONNECTOR, COAXIAL"TRIAX" (CE)
206	⚠ 1-565-797-12	s	CONNECTOR,DOUBLE COAXIAL"TRIAX"(J)
207	⚠ 1-565-801-11	s	CONNECTOR,DOUBLE COAXIAL"TRIAX"(UC)
208	⚠ 1-576-231-41	s	FUSE (H.B.C.) 250A T4AH
209	1-657-762-21	o	PRINTED CIRCUIT BOARD, SW-750
210	1-657-763-21	o	PRINTED CIRCUIT BOARD, SW-784
211	1-762-548-11	s	SWITCH, TOGGLE

No.	Part No.	SP	Description
212	3-171-996-03	s	KNOB (R), VR
213	3-178-098-11	s	SHEET (VR), INSULATING
214	3-185-891-01	o	CONNECTOR, ROTARY SHAFT
215	3-185-892-11	o	NUT
216	3-185-896-01	o	WASHER, CONDUCTIVE
217	3-185-949-11	o	BOX, TRIAX
218	3-312-823-00	s	PACKING, KNOB
219	3-676-244-11	s	COVER, SW
220	3-692-170-02	o	PLATE,CONNECTOR(INCOM)
221	3-692-172-02	o	PLATE,TRIAX
222	3-692-177-02	o	COVER,SWITCH PS
223	3-692-178-11	o	PLATE,CONNECTOR(PS)
224	7-623-710-97	s	WASHER 18, WABE TYPE



No.	Part No.	SP	Description
301	⚠ A-8272-595-A	o	MOUNTED CIRCUIT BOARD, FL-180
302	⚠ A-8272-598-A	s	CONVERTER, AC.DC/DC

REAR PANEL BLOCK



No.	Part No.	SP	Description
401	1-507-251-99	s	JACK "EARPHONE"
402	1-509-176-31	s	CONNECTOR, 3P MALE "MIC"(J)
403	1-509-184-31	s	CONNECTOR, 3P FEMALE "MIC" (UC,CE)
404	1-562-244-00	o	CONNECTOR, 26P MALE "VTR"
405	1-563-159-11	s	CONNECTOR, 5P FEMALE "INCOM"
406	1-563-833-11	s	CONNECTOR, 6P REMALE "RET CONT"
407	1-657-764-21	o	PRINTED CIRCUIT BOARD, CN-1164
408	1-955-074-11	o	HARNESS, SUB (CCZ)
409	3-166-346-01	s	CAP (CCZ), DROP PROTECTION
410	3-186-499-01	o	CONNECTOR, CAP
411	3-437-229-01	s	INSULATOR (B), JACK
412	3-685-115-01	o	CAP, 6P CONNECTOR
413	3-692-142-11	o	PLATE,CA
414	3-692-159-11	o	PLATE,CONNECTOR(MIC)
415	3-692-180-02	o	PLATE EARPHONE
416	3-694-181-01	s	SCREW, PRECISION P2.6 TYPE1
417	3-741-726-01	o	CAP (2), XLR (FOR MALE CONNECTOR)
418	3-741-727-01	o	CAP (1), XLR (FOR FEMALE CONNECTOR)
419	3-849-405-00	s	COVER, EARPHONE JACK

Part No.	SP	Description
7-621-592-00	s	SCREW +K 2.6X6
7-621-770-87	s	SCREW +B 2.6X5
7-621-773-86	s	SCREW +B 2.6X4
7-623-710-97	s	WASHER 18, WABE TYPE
7-627-552-48	s	SCREW,PRECISION +P 1.7X4
7-627-553-67	s	SCREW,PRECISION +P 2X5
7-627-556-58	s	SCREW +P 2.6X5
7-627-556-98	s	SCREW,PRECISION +P 2.6X8 TYPE1
7-682-247-04	s	SCREW +K 3X6
7-682-545-04	s	SCREW +B 3X4
7-682-547-09	s	SCREW +B 3X6
7-682-548-04	s	SCREW +B 3X8
7-682-548-09	s	SCREW +B 3X8
7-682-563-04	s	SCREW +B 4X12
7-682-563-09	s	SCREW +B 4X12
7-683-404-04	s	BOLT,HEXAGON SOCKET 3X8
7-683-413-05	s	BOLT,HEXAGON SOCKET 2.6X8
7-684-023-04	s	N 3, TYPE 2
7-685-533-19	s	SCREW +BTP 2.6X6 TYPE2 N-S
7-685-534-19	s	SCREW +BTP 2.6X8 TYPE2 N-S

4-3. Electrical Parts List

AU-211 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-584-A	o	MOUNTED CIRCUIT BOARD, AU-211
1pc	3-692-162-02	o	PANEL,AU-211 PC BOARD
1pc	3-724-753-01	o	RING
6pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C2	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V
C3	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V
C4	1-162-959-11	s	CERAMIC 330PF 5% 50V
C5	1-162-959-11	s	CERAMIC 330PF 5% 50V
C6	1-128-453-21	s	ELECT 47uF 20% 6.3V
C7	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C8	1-164-156-11	s	CERAMIC 0.1uF 25V
C9	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V
C10	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V
C13	1-128-403-11	s	ELECT 47uF 20% 35V
C14	1-104-601-11	s	ELECT 10uF 20% 10V
C15	1-104-601-11	s	ELECT 10uF 20% 10V
C17	1-128-593-11	s	ELECT(NONPOLAR) 0.47uF 20% 50V
C18	1-128-593-11	s	ELECT(NONPOLAR) 0.47uF 20% 50V
C19	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C20	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C21	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C22	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C23	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C24	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V
C25	1-135-227-11	s	TANTAL 100uF 10% 6.3V
C26	1-128-394-11	s	ELECT 220uF 20% 10V
C27	1-162-924-11	s	CERAMIC 56PF 5% 50V
C32	1-164-156-11	s	CERAMIC 0.1uF 25V
C33	1-135-138-11	s	TANTALUM, CHIP 10uF 20% 25V
C34	1-135-138-11	s	TANTALUM, CHIP 10uF 20% 25V
C35	1-164-156-11	s	CERAMIC 0.1uF 25V
C36	1-135-140-11	s	TANTAL 15uF 10% 20V
C37	1-135-140-11	s	TANTAL 15uF 10% 20V
C38	1-135-140-11	s	TANTAL 15uF 10% 20V
C39	1-135-140-11	s	TANTAL 15uF 10% 20V
C40	1-128-592-11	s	ELECT 0.33uF 20% 50V
C41	1-128-592-11	s	ELECT 0.33uF 20% 50V
C42	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C43	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C44	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C45	1-164-156-11	s	CERAMIC 0.1uF 25V
C46	1-164-156-11	s	CERAMIC 0.1uF 25V
C47	1-164-156-11	s	CERAMIC 0.1uF 25V
C48	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C49	1-164-156-11	s	CERAMIC 0.1uF 25V
C50	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C51	1-164-156-11	s	CERAMIC 0.1uF 25V
C52	1-128-453-21	s	ELECT 47uF 20% 6.3V
C53	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C54	1-162-928-11	s	CERAMIC 120PF 5% 50V
C55	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C56	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C57	1-126-404-11	s	CHIP,ELECT 4.7uF 20% 50V
C58	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C61	1-126-404-11	s	CHIP,ELECT 4.7uF 20% 50V
C62	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C63	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C64	1-128-592-11	s	ELECT 0.33uF 20% 50V
C66	1-128-592-11	s	ELECT 0.33uF 20% 50V

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C68	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C69	1-164-156-11	s	CERAMIC 0.1uF 25V
C70	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C71	1-164-156-11	s	CERAMIC 0.1uF 25V
C72	1-164-156-11	s	CERAMIC 0.1uF 25V
C73	1-164-156-11	s	CERAMIC 0.1uF 25V
C74	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C75	1-164-156-11	s	CERAMIC 0.1uF 25V
C76	1-128-453-21	s	ELECT 47uF 20% 6.3V
C77	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C78	1-162-928-11	s	CERAMIC 120PF 5% 50V
C79	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C80	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C81	1-164-156-11	s	CERAMIC 0.1uF 25V
C82	1-162-959-11	s	CERAMIC 330PF 5% 50V
C83	1-164-156-11	s	CERAMIC 0.1uF 25V
C84	1-164-156-11	s	CERAMIC 0.1uF 25V
C85	1-164-156-11	s	CERAMIC 0.1uF 25V
C86	1-164-156-11	s	CERAMIC 0.1uF 25V
C87	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C88	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C89	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C90	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C91	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C92	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C93	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C94	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C95	1-162-925-11	s	CERAMIC, CHIP 68PF 5% 50V
C96	1-162-925-11	s	CERAMIC, CHIP 68PF 5% 50V
C97	1-135-181-21	s	TANTALUM, CHIP 4.7uF 10% 6.3V
C98	1-164-217-11	s	CERAMIC 150PF 5% 50V
C99	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C100	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C101	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C102	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C103	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C104	1-164-217-11	s	CERAMIC 150PF 5% 50V
C105	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C106	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C107	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C108	1-128-403-11	s	ELECT 47uF 20% 35V
C109	1-135-136-21	s	TANTALUM 6.8uF 10% 35V
C110	1-128-403-11	s	ELECT 47uF 20% 35V
C111	1-126-934-11	s	ELECT 220uF 20% 16V
C112	1-135-136-21	s	TANTALUM 6.8uF 10% 35V
C113	1-135-136-21	s	TANTALUM 6.8uF 10% 35V
C114	1-128-403-11	s	ELECT 47uF 20% 35V
C115	1-126-934-11	s	ELECT 220uF 20% 16V
C116	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C117	1-165-112-11	s	CERAMIC 0.33uF 16V
C119	1-162-928-11	s	CERAMIC 120PF 5% 50V
C120	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C121	1-104-914-11	s	TANTAL 22uF 20% 16V
C123	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C125	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C126	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C130	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C131	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C132	1-162-964-11	s	CERAMIC 0.001uF 10% 50V

http://getMANUAL.com

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C133	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C134	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C135	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C136	1-135-164-21	s	TANTALUM, CHIP 22uF 20% 10V
C137	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C138	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C139	1-165-128-11	s	CERAMIC 0.22uF 16V
C140	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C141	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C142	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C143	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C144	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C145	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
D2	8-719-404-35	s	DIODE MA141WK
D5	8-719-106-52	s	DIODE RD10M-B1
D6	8-719-029-65	s	DIODE RD4.7UJN-T1
D7	8-719-404-35	s	DIODE MA141WK
D8	8-719-404-35	s	DIODE MA141WK
D9	8-719-404-35	s	DIODE MA141WK
D10	8-719-017-42	s	DIODE HSM88WA
D11	8-719-404-35	s	DIODE MA141WK
D12	8-719-024-81	s	DIODE 1SS300-TE85L
D17	8-719-029-76	s	DIODE RD13UJN-T1
D18	8-719-404-35	s	DIODE MA141WK
D19	8-719-404-35	s	DIODE MA141WK
D20	8-719-404-35	s	DIODE MA141WK
D21	8-719-024-81	s	DIODE 1SS300-TE85L
D22	8-719-029-65	s	DIODE RD4.7UJN-T1
D23	8-719-800-76	s	DIODE 1SS226
D24	8-719-800-76	s	DIODE 1SS226
D25	8-719-029-65	s	DIODE RD4.7UJN-T1
D26	8-719-404-35	s	DIODE MA141WK
D27	8-719-800-76	s	DIODE 1SS226
D28	8-719-800-76	s	DIODE 1SS226
D29	8-719-029-76	s	DIODE RD13UJN-T1
D30	8-759-274-67	s	IC LM4040BIM3X-5.0
D31	8-719-041-68	s	DIODE RD3.3UH-T1
D32	8-719-041-68	s	DIODE RD3.3UH-T1
IC1	8-759-278-58	s	IC NJM4558V-TE2
IC2	8-759-082-61	s	IC TC4W53FU
IC4	8-759-983-69	s	IC LM358PS
IC5	8-759-085-04	s	IC M51132FP
IC6	8-759-278-58	s	IC NJM4558V-TE2
IC8	8-759-356-17	s	IC NJM4556AM-A-TE2
IC9	8-759-300-71	s	IC MC14053BF
IC10	8-759-082-61	s	IC TC4W53FU
IC11	8-759-100-93	s	IC UPC393G2
IC12	8-759-209-54	s	IC TC4S01F
IC13	8-759-231-30	s	IC TC4S30F
IC14	8-759-278-58	s	IC NJM4558V-TE2
IC15	8-759-278-58	s	IC NJM4558V-TE2
IC16	8-759-092-83	s	IC SN75158PS-E20
IC17	8-749-924-62	s	PNOTO COUPLER PC410
IC18	8-749-924-62	s	PNOTO COUPLER PC410
IC19	8-759-231-30	s	IC TC4S30F
IC20	8-759-032-01	s	IC MC74HC00AF
IC22	8-759-100-93	s	IC UPC393G2
IC23	8-759-209-57	s	IC TC4S69F

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC24	8-759-260-55	s	IC TLC272CPW-E05
L1	1-412-032-11	s	INDUCTOR CHIP 100uH
Q1	8-729-119-04	s	TRANSISTOR 2SC3115
Q2	8-729-117-32	s	TRANSISTOR 2SC4177
Q3	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q4	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q5	8-729-119-04	s	TRANSISTOR 2SC3115
Q6	8-729-117-32	s	TRANSISTOR 2SC4177
Q7	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q8	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q9	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q17	8-729-117-32	s	TRANSISTOR 2SC4177
Q18	8-729-117-32	s	TRANSISTOR 2SC4177
Q19	8-729-117-32	s	TRANSISTOR 2SC4177
Q20	8-729-117-32	s	TRANSISTOR 2SC4177
Q21	8-729-928-27	s	TRANSISTOR DTA144EE
Q22	8-729-119-04	s	TRANSISTOR 2SC3115
Q23	8-729-119-04	s	TRANSISTOR 2SC3115
Q24	8-729-119-04	s	TRANSISTOR 2SC3115
Q25	8-729-117-32	s	TRANSISTOR 2SC4177
Q26	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q27	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q28	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q29	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q30	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q31	8-729-117-32	s	TRANSISTOR 2SC4177
Q32	8-729-119-04	s	TRANSISTOR 2SC3115
Q33	8-729-117-32	s	TRANSISTOR 2SC4177
Q34	8-729-117-32	s	TRANSISTOR 2SC4177
Q35	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q36	8-729-119-61	s	TRANSISTOR 2SA811A-C15
Q37	8-729-117-32	s	TRANSISTOR 2SC4177
Q38	8-729-928-27	s	TRANSISTOR DTA144EE
Q39	8-729-119-04	s	TRANSISTOR 2SC3115
Q40	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q41	8-729-119-04	s	TRANSISTOR 2SC3115
Q42	8-729-928-81	s	TRANSISTOR DTC144EE
Q43	8-729-119-04	s	TRANSISTOR 2SC3115
Q44	8-729-216-22	s	TRANSISTOR 2SA1162
Q45	8-729-117-32	s	TRANSISTOR 2SC4177
Q46	8-729-117-32	s	TRANSISTOR 2SC4177
Q47	8-729-119-04	s	TRANSISTOR 2SC3115
Q48	8-729-117-32	s	TRANSISTOR 2SC4177
Q49	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q50	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q51	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q52	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q53	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q54	8-729-117-32	s	TRANSISTOR 2SC4177
Q55	8-729-119-04	s	TRANSISTOR 2SC3115
Q56	8-729-117-32	s	TRANSISTOR 2SC4177
Q57	8-729-117-32	s	TRANSISTOR 2SC4177
Q58	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q59	8-729-117-32	s	TRANSISTOR 2SC4177
Q60	8-729-117-32	s	TRANSISTOR 2SC4177
Q61	8-729-117-32	s	TRANSISTOR 2SC4177
Q62	8-729-118-56	s	TRANSISTOR 2SK852-X2

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q63	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q64	8-729-117-32	s	TRANSISTOR 2SC4177
Q65	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q66	8-729-106-68	s	TRANSISTOR 2SC1615A-GP
Q67	8-729-106-60	s	TRANSISTOR 2SB1115A
Q68	8-729-117-32	s	TRANSISTOR 2SC4177
Q69	8-729-117-32	s	TRANSISTOR 2SC4177
Q70	8-729-117-32	s	TRANSISTOR 2SC4177
Q71	8-729-117-32	s	TRANSISTOR 2SC4177
Q72	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q73	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q74	8-729-117-32	s	TRANSISTOR 2SC4177
Q75	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q76	8-729-106-68	s	TRANSISTOR 2SC1615A-GP
Q77	8-729-106-60	s	TRANSISTOR 2SB1115A
Q78	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q79	8-729-928-81	s	TRANSISTOR DTC144EE
Q82	8-729-117-32	s	TRANSISTOR 2SC4177
Q83	8-729-159-65	s	TRANSISTOR 2SD596-DV5
Q84	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q85	8-729-141-48	s	TRANSISTOR 2SB624-BV345
R1	1-218-844-11	s	CHIP, METAL 750 0.50% 1/16W
R2	1-218-844-11	s	CHIP, METAL 750 0.50% 1/16W
R3	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R4	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R5	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R6	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R7	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R8	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R9	1-218-723-11	s	METAL 20K 0.50% 1/16W
R10	1-218-870-11	s	CHIP, METAL 9.1K 0.50% 1/16W
R11	1-218-720-11	s	METAL 15K 0.50% 1/16W
R12	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R13	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R14	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R15	1-218-870-11	s	CHIP, METAL 9.1K 0.50% 1/16W
R16	1-218-720-11	s	METAL 15K 0.50% 1/16W
R17	1-218-723-11	s	METAL 20K 0.50% 1/16W
R18	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R19	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R20	1-218-723-11	s	METAL 20K 0.50% 1/16W
R21	1-218-723-11	s	METAL 20K 0.50% 1/16W
R22	1-218-727-11	s	METAL 30K 0.50% 1/16W
R23	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R24	1-218-828-11	s	METAL 160 0.50% 1/16W
R25	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R26	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R27	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R28	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R30	1-218-866-11	s	CHIP, METAL 6.2K 0.50% 1/16W
R31	1-216-847-11	s	METAL, CHIP 150K 5% 1/16W
R32	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R33	1-216-846-11	s	METAL, CHIP 120K 5% 1/16W
R34	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R35	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R36	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R37	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R38	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R39	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R40	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R41	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R42	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R43	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R44	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R46	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R47	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R48	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R49	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R50	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R51	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R52	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R53	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R56	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R57	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R58	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R59	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R60	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R61	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R62	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R63	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R64	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R65	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R66	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R67	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R68	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R69	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R70	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R71	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R72	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R73	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R74	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R75	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R76	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R77	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R78	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R79	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R80	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R81	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R82	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R83	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R84	1-218-723-11	s	METAL 20K 0.50% 1/16W
R85	1-218-841-11	s	CHIP, METAL 560 0.50% 1/16W
R86	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R87	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R88	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R89	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R90	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R91	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R92	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R93	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R94	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R95	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R97	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R98	1-216-801-11	s	METAL, CHIP 22 5% 1/16W
R99	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R100	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R101	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R102	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R103	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R104	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R105	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R106	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R107	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R108	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R109	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R110	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R111	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R112	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R113	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R114	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R115	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R116	1-218-841-11	s	CHIP, METAL 560 0.50% 1/16W
R117	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R118	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R119	1-218-723-11	s	CHIP, METAL 20K 5% 1/16W
R120	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R121	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R122	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R123	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R124	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R125	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R126	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R127	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R128	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R130	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R131	1-216-801-11	s	METAL, CHIP 22 5% 1/16W
R132	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R133	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R134	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R135	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R136	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R137	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R138	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R139	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R140	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R141	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R142	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R143	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R144	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R145	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R146	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R147	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R148	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R149	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R150	1-218-829-11	s	CHIP, METAL 180 0.50% 1/16W
R151	1-218-829-11	s	CHIP, METAL 180 0.50% 1/16W
R156	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R157	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R158	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R159	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R160	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R161	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R162	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R163	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R164	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R165	1-216-797-11	s	METAL, CHIP 10 5% 1/16W

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R166	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R167	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R168	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R169	1-218-841-11	s	CHIP, METAL 560 0.50% 1/16W
R170	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R171	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R172	1-218-723-11	s	CHIP, METAL 20K 5% 1/16W
R173	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R174	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R175	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R176	1-216-813-11	s	METAL, CHIP 220 5% 1/16W
R177	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R178	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R179	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R180	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R181	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R182	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R183	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R184	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R188	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R189	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R190	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R191	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R193	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R194	1-218-866-11	s	CHIP, METAL 6.2K 0.50% 1/16W
R195	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R196	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R197	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R198	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R199	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R200	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R201	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R202	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R203	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R204	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R205	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R206	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R207	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R208	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R209	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R210	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R211	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R215	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R216	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R217	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R220	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R221	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R222	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R223	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R224	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R225	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R226	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R227	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R229	1-216-791-11	s	METAL, CHIP 3.3 5% 1/16W
R230	1-216-791-11	s	METAL, CHIP 3.3 5% 1/16W
R231	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R232	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R233	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R234	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R235	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R236	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R237	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R238	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R239	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R240	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R241	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R242	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R243	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R244	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R245	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R246	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R247	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R248	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R250	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R251	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R253	1-216-791-11	s	METAL, CHIP 3.3 5% 1/16W
R254	1-216-791-11	s	METAL, CHIP 3.3 5% 1/16W
R255	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R257	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R258	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R266	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R267	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R268	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R269	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R270	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R271	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R272	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R273	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R274	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R275	1-218-671-11	s	CHIP, METAL 130 0.50% 1/16W
R276	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R277	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R278	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R279	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R280	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R285	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R286	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R287	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R288	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R289	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R290	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R291	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R292	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R293	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R294	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R295	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R296	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R297	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R298	1-218-727-11	s	METAL 30K 0.50% 1/16W
R299	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R300	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R301	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R302	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R400	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R401	1-218-727-11	s	CHIP, METAL 30K 1% 1/6W
R402	1-218-844-11	s	CHIP, METAL 750 0.50% 1/16W
R403	1-218-844-11	s	CHIP, METAL 750 0.50% 1/16W
R404	1-215-407-00	s	METAL 270 1% 1/6W

(AU-211 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
RV1	1-237-036-11	s	RES, ADJ METAL 10K
RV3	1-237-040-11	s	RES, ADJ METAL 200K
RV4	1-237-036-11	s	RES, ADJ METAL 10K
SW1	1-692-531-11	s	SWITCH, TOGGLE
SW2	1-692-271-21	s	SWITCH, SLIDE
SW3	1-692-881-21	s	SWITCH, SLIDE
SW4	1-692-530-11	s	SWITCH, TOGGLE
SW5	1-570-711-11	s	SWITCH, SLIDE
SW6	1-570-711-11	s	SWITCH, SLIDE

CN-1164 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-764-21	o	PRINTED CIRCUIT BOARD, CN-1164
CN601	1-764-093-21	o	PIN, CONNECTOR (PC BOARD) 8P
CN602	1-766-696-11	o	CONNECTOR, 8P

CN-1190 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-596-A	o	MOUNTED CIRCUIT BOARD, CN-1190
CN202	1-764-099-11	s	PIN, CONNECTOR (PC BOARD) 14P
CN203	1-569-531-11	s	HOUSING, 20P
CN204	1-569-531-11	s	HOUSING, 20P

DM-98 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-580-A	o	MOUNTED CIRCUIT BOARD, DM-98
C1	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C2	1-164-156-11	s	CERAMIC 0.1uF 25V
C3	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C4	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C5	1-162-910-11	s	CERAMIC 5PF 0.25PF 50V
C6	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C7	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C8	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C9	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C10	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C11	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C12	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C13	1-164-156-11	s	CERAMIC 0.1uF 25V
C14	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C15	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C16	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C17	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C18	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C19	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C20	1-164-156-11	s	CERAMIC 0.1uF 25V
C21	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C22	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C23	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C24	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C25	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C26	1-164-156-11	s	CERAMIC 0.1uF 25V
C27	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C28	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C29	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C30	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C31	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C32	1-164-156-11	s	CERAMIC 0.1uF 25V
C33	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C34	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C35	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C36	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C37	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C38	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C39	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C40	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C41	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C42	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C43	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C44	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C45	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C46	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C47	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C48	1-135-091-91	s	CHIP, TANTALUM 1uF 20% 16V
C49	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C50	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C51	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C52	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C54	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C55	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C56	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C57	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C58	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V

(DM-98 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C59	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C60	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C61	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C62	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C63	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C64	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C65	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C66	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C67	1-164-156-11	s	CERAMIC 0.1uF 25V
C68	1-164-156-11	s	CERAMIC 0.1uF 25V
C69	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C70	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C71	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C72	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C73	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C74	1-135-227-11	s	TANTAL 100uF 10% 6.3V
C75	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C76	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C77	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C78	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C79	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C80	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C81	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C82	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C83	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C84	1-164-156-11	s	CERAMIC 0.1uF 25V
C85	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C90	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C91	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C92	1-162-959-11	s	CERAMIC 330PF 5% 50V
C93	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C94	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C100	1-131-367-00	s	TANTALUM, CHIP 22uF 10% 20V
C101	1-131-367-00	s	TANTALUM, CHIP 22uF 10% 20V
CN1	1-568-360-21	s	CONNECTOR, BOARD TO BOARD 22P
CN2	1-766-703-11	s	CONNECTOR, COAXIAL
D1	8-719-002-81	s	DIODE 1T363
D2	8-719-002-81	s	DIODE 1T363
D3	8-719-002-81	s	DIODE 1T363
D4	8-719-002-81	s	DIODE 1T363
D5	8-719-974-76	s	DIODE HSM107S
D6	8-719-404-35	s	DIODE MA141WK
D7	8-719-404-35	s	DIODE MA141WK
D8	8-719-041-68	s	DIODE RD3.3UH-T1
D9	8-759-274-67	s	IC LM4040BIM3X-5.0
FL1	1-233-274-11	s	FILTER, BAND PASS
FL2	1-239-972-11	s	FILTER, LOW-PASS
IC1	8-759-266-17	s	IC CA3102M
IC2	8-759-266-17	s	IC CA3102M
IC3	8-752-032-63	s	IC CXA1165M
IC4	8-752-052-82	s	IC CXA1432M
IC5	8-759-300-71	s	IC MC14053BF
IC6	8-759-300-71	s	IC MC14053BF
IC7	8-759-230-14	s	IC TC4S81F(TE85R)
IC8	8-759-008-91	s	IC MC14023BF
IC9	8-759-173-16	s	IC TL062CPW
L1	1-412-026-11	s	INDUCTOR CHIP 1uH
L2	1-412-026-11	s	INDUCTOR CHIP 1uH
L3	1-412-029-11	s	INDUCTOR CHIP 10uH

(DM-98 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L4	1-412-029-11	s	INDUCTOR CHIP 10uH
L5	1-410-136-11	s	INDUCTOR 3.3uH
L6	1-412-026-11	s	INDUCTOR CHIP 1uH
L7	1-412-026-11	s	INDUCTOR CHIP 1uH
L8	1-412-026-11	s	INDUCTOR CHIP 1uH
L9	1-412-026-11	s	INDUCTOR CHIP 1uH
L10	1-414-142-11	s	INDUCTOR 1UH
LV1	1-409-819-21	s	COIL, VAR
LV2	1-409-817-21	s	COIL, VAR
Q1	8-729-119-28	s	TRANSISTOR 2SC2758-U18
Q2	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q3	8-729-024-58	s	TRANSISTOR 2SA1688-5
Q4	8-729-026-32	s	TRANSISTOR XP6534
Q5	8-729-026-32	s	TRANSISTOR XP6534
Q6	8-729-026-32	s	TRANSISTOR XP6534
Q7	8-729-026-32	s	TRANSISTOR XP6534
Q8	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q9	8-729-117-32	s	TRANSISTOR 2SC4177
Q10	8-729-026-32	s	TRANSISTOR XP6534
Q11	8-729-117-32	s	TRANSISTOR 2SC4177
Q12	8-729-026-31	s	TRANSISTOR XP6435
Q13	8-729-117-32	s	TRANSISTOR 2SC4177
Q14	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q15	8-729-117-32	s	TRANSISTOR 2SC4177
Q16	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q17	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q18	8-729-117-32	s	TRANSISTOR 2SC4177
Q19	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q20	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q21	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q22	8-729-117-32	s	TRANSISTOR 2SC4177
Q23	8-729-026-31	s	TRANSISTOR XP6435
Q24	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q25	8-729-024-56	s	TRANSISTOR 2SA1808
Q26	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q27	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q28	8-729-024-56	s	TRANSISTOR 2SA1808
Q29	8-729-928-81	s	TRANSISTOR DTC144EE
Q30	8-729-928-81	s	TRANSISTOR DTC144EE
Q31	8-729-117-32	s	TRANSISTOR 2SC4177
Q32	8-729-928-81	s	TRANSISTOR DTC144EE
Q33	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q34	8-729-928-81	s	TRANSISTOR DTC144EE
Q35	8-729-928-27	s	TRANSISTOR DTA144EE
Q36	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q37	8-729-928-81	s	TRANSISTOR DTC144EE
Q38	8-729-159-65	s	TRANSISTOR 2SD596-DV5
R1	1-218-716-11	s	METAL 10K 0.50% 1/16W
R2	1-218-868-11	s	CHIP, METAL 7.5K 0.50% 1/16W
R3	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R4	1-218-664-11	s	CHIP, METAL 68 0.50% 1/16W
R5	1-218-688-11	s	METAL 680 0.50% 1/16W
R6	1-218-716-11	s	METAL 10K 0.50% 1/16W
R7	1-218-716-11	s	METAL 10K 0.50% 1/16W
R8	1-211-977-11	s	CHIP, METAL 22 0.50% 1/16W
R9	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R10	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W

(DM-98 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R11	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R12	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R13	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R14	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R15	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W
R16	1-218-672-11	s	METAL 150 0.50% 1/16W
R17	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R18	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R19	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R20	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R21	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R22	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R23	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R24	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R25	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W
R26	1-218-671-11	s	CHIP, METAL 130 0.50% 1/16W
R27	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R28	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R29	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R30	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R31	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R32	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R33	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R34	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W
R35	1-218-671-11	s	CHIP, METAL 130 0.50% 1/16W
R36	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R37	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R38	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R39	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R40	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R41	1-218-661-11	s	CHIP, METAL 51 0.50% 1/16W
R42	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R43	1-218-677-11	s	CHIP, METAL 240 0.50% 1/16W
R44	1-211-981-11	s	CHIP, METAL 33 0.50% 1/16W
R45	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W
R46	1-218-671-11	s	CHIP, METAL 130 0.50% 1/16W
R47	1-218-677-11	s	CHIP, METAL 240 0.50% 1/16W
R48	1-211-981-11	s	CHIP, METAL 33 0.50% 1/16W
R49	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R50	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R51	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R52	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R53	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R54	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R55	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R56	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R57	1-218-676-11	s	METAL 220 0.50% 1/16W
R58	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R59	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R60	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R61	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R63	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R64	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R65	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R66	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R67	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R68	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R69	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R70	1-218-845-11	s	CHIP, METAL 820 0.50% 1/16W

(DM-98 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R71	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R72	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R73	1-218-883-11	s	METAL 33K 0.50% 1/16W
R74	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R76	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R77	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R78	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R79	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R80	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R81	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R82	1-218-688-11	s	METAL 680 0.50% 1/16W
R83	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R84	1-218-716-11	s	METAL 10K 0.50% 1/16W
R85	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R86	1-218-716-11	s	METAL 10K 0.50% 1/16W
R88	1-218-716-11	s	METAL 10K 0.50% 1/16W
R89	1-211-977-11	s	CHIP, METAL 22 0.50% 1/16W
R90	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R91	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R92	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R93	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R94	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W
R95	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R96	1-218-868-11	s	CHIP, METAL 7.5K 0.50% 1/16W
R97	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R98	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R99	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R100	1-218-732-11	s	METAL 47K 0.50% 1/16W
R101	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R102	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R104	1-218-845-11	s	CHIP, METAL 820 0.50% 1/16W
R105	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R106	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R107	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R108	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R109	1-218-732-11	s	METAL 47K 0.50% 1/16W
R110	1-218-732-11	s	METAL 47K 0.50% 1/16W
R111	1-218-732-11	s	METAL 47K 0.50% 1/16W
R112	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R113	1-218-695-11	s	METAL 1.3K 0.50% 1/16W
R114	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R115	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R116	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R117	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R118	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R119	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R120	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R121	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R122	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R123	1-218-732-11	s	METAL 47K 0.50% 1/16W
R124	1-218-732-11	s	METAL 47K 0.50% 1/16W
R125	1-218-732-11	s	METAL 47K 0.50% 1/16W
R126	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R127	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R128	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R130	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R131	1-218-732-11	s	METAL 47K 0.50% 1/16W
R132	1-218-881-11	s	CHIP, METAL 27K 0.50% 1/16W
R133	1-218-680-11	s	METAL 330 0.50% 1/16W

(DM-98 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R134	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R135	1-218-716-11	s	METAL 10K 0.50% 1/16W
R136	1-218-732-11	s	METAL 47K 0.50% 1/16W
R137	1-218-732-11	s	METAL 47K 0.50% 1/16W
R138	1-218-716-11	s	METAL 10K 0.50% 1/16W
R140	1-218-732-11	s	METAL 47K 0.50% 1/16W
R141	1-218-716-11	s	METAL 10K 0.50% 1/16W
R150	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R151	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R152	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R153	1-218-723-11	s	METAL 20K 0.50% 1/16W
R154	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R155	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R156	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
RV1	1-237-034-11	s	RES, ADJ METAL 2K
RV2	1-237-033-11	s	RES, ADJ METAL 1K
S1	1-692-270-21	s	SWITCH, SLIDE

FL-180 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠ A-8272-595-A	o	MOUNTED CIRCUIT BOARD, FL-180

LP-87 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-765-21	o	PRINTED CIRCUIT BOARD, LP-87
1pc	1-695-215-11	o	CONTACT, FEMALE
1pc	1-764-192-11	o	HOUSING, 2P
D1	8-719-989-53	s	DIODE CL-200HR-C-TSL
D2	8-719-989-53	s	DIODE CL-200HR-C-TSL
S1	1-570-612-11	s	SWITCH, TOGGLE

MB-605 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-593-A	o	MOUNTED CIRCUIT BOARD, MB-605
2pcs	2-280-622-01	o	SUPPORT (M3), HEXAGON
2pcs	7-682-545-04	s	SCREW +B 3X4
9pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C1	1-164-156-11	s	CERAMIC 0.1uF 25V
C2	1-164-156-11	s	CERAMIC 0.1uF 25V
C3	1-164-156-11	s	CERAMIC 0.1uF 25V
C4	1-164-156-11	s	CERAMIC 0.1uF 25V
C5	1-164-156-11	s	CERAMIC 0.1uF 25V
CN5	1-568-331-11	s	CONNECTOR, BOARD TO BOARD 10P
CN6	1-766-703-11	s	CONNECTOR, COAXIAL
CN7	1-766-703-11	s	CONNECTOR, COAXIAL
CN8	1-766-703-11	s	CONNECTOR, COAXIAL
CN9	1-764-099-11	s	PIN, CONNECTOR (PC BOARD) 14P
CN10	1-569-531-11	s	HOUSING, 20P
CN11	1-569-531-11	s	HOUSING, 20P
CN12	1-695-480-21	o	PIN, CONNECTOR (PC BOARD) 2P
CN13	1-695-890-21	o	PIN, CONNECTOR (PC BOARD) 12P
CN14	1-764-079-21	s	PIN, CONNECTOR (PC BOARD) 4P
CN15	1-764-078-11	s	PIN, CONNECTOR (PC BOARD) 3P
CN17	1-764-087-21	s	PIN, CONNECTOR (PC BOARD) 14P
CN18	1-695-209-11	s	PIN, CONNECTOR (PC BOARD) 15P
CN19	1-695-890-21	o	PIN, CONNECTOR (PC BOARD) 12P
CN20	1-750-635-21	o	PIN, CONNECTOR (PC BOARD) 5P
CN21	1-764-079-21	s	PIN, CONNECTOR (PC BOARD) 4P
CN22	1-695-207-21	o	PIN, CONNECTOR (PC BOARD) 6P
CN23	1-764-080-21	s	PIN, CONNECTOR (PC BOARD) 8P
CN24	1-764-087-21	s	PIN, CONNECTOR (PC BOARD) 14P
CN25	1-764-082-21	s	PIN, CONNECTOR (PC BOARD) 11P
CN26	1-764-078-11	s	PIN, CONNECTOR (PC BOARD) 3P
CN29	1-695-889-21	s	PIN, CONNECTOR (PC BOARD) 10P
CN30	1-764-081-21	s	PIN, CONNECTOR (PC BOARD) 9P
CN31	1-695-479-21	o	PIN, CONNECTOR (PC BOARD) 2P
IC1	8-759-990-61	s	IC PCF8574T
IC2	8-759-086-42	s	IC X24C02S-3.0-C7000
IC3	8-759-990-61	s	IC PCF8574T
IC4	8-759-990-61	s	IC PCF8574T
IC5	8-759-990-61	s	IC PCF8574T
R1	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R2	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R3	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R4	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R5	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R6	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R7	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R8	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R9	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R10	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R11	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R12	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R13	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R14	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R15	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R16	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R17	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R18	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R19	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R20	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W

(MB-605 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R21	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R22	1-216-295-11	s	CHIP, CONDUCTOR 0
RB1	1-236-907-11	s	RESISTOR BLOCK, CHIP 100KX4
RB2	1-236-907-11	s	RESISTOR BLOCK, CHIP 100KX4
RB3	1-236-907-11	s	RESISTOR BLOCK, CHIP 100KX4
RB4	1-236-907-11	s	RESISTOR BLOCK, CHIP 100KX4
RB5	1-236-907-11	s	RESISTOR BLOCK, CHIP 100KX4
RB6	1-236-904-11	s	RESISTOR BLOCK, CHIP 1KX4

MD-103 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-582-A	o	MOUNTED CIRCUIT BOARD, MD-103
1pc	3-692-161-02	o	PANEL,MD-103 PC BOARD
1pc	3-724-753-01	o	RING
6pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C1	1-162-906-11	s	CHIP, CERAMIC 1.5PF 0.25PF 50V
C2	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C3	1-162-974-11	s	CERAMIC 0.01uF 50V
C4	1-164-156-11	s	CERAMIC 0.1uF 25V
C5	1-164-156-11	s	CERAMIC 0.1uF 25V
C6	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C7	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C8	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C9	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C10	1-162-920-11	s	CERAMIC, CHIP 27PF 5% 50V
C11	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C12	1-164-156-11	s	CERAMIC 0.1uF 25V
C13	1-164-156-11	s	CERAMIC 0.1uF 25V
C14	1-164-156-11	s	CERAMIC 0.1uF 25V
C16	1-164-156-11	s	CERAMIC 0.1uF 25V
C17	1-164-156-11	s	CERAMIC 0.1uF 25V
C18	1-164-156-11	s	CERAMIC 0.1uF 25V
C19	1-164-156-11	s	CERAMIC 0.1uF 25V
C20	1-164-156-11	s	CERAMIC 0.1uF 25V
C21	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C22	1-164-156-11	s	CERAMIC 0.1uF 25V
C23	1-164-156-11	s	CERAMIC 0.1uF 25V
C24	1-164-156-11	s	CERAMIC 0.1uF 25V
C26	1-164-156-11	s	CERAMIC 0.1uF 25V
C27	1-164-156-11	s	CERAMIC 0.1uF 25V
C28	1-164-156-11	s	CERAMIC 0.1uF 25V
C29	1-164-156-11	s	CERAMIC 0.1uF 25V
C30	1-164-156-11	s	CERAMIC 0.1uF 25V
C31	1-164-156-11	s	CERAMIC 0.1uF 25V
C32	1-164-156-11	s	CERAMIC 0.1uF 25V
C33	1-164-156-11	s	CERAMIC 0.1uF 25V
C34	1-164-156-11	s	CERAMIC 0.1uF 25V
C35	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C36	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C37	1-164-156-11	s	CERAMIC 0.1uF 25V
C38	1-164-156-11	s	CERAMIC 0.1uF 25V
C39	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C40	1-164-156-11	s	CERAMIC 0.1uF 25V
C41	1-164-156-11	s	CERAMIC 0.1uF 25V
C42	1-164-156-11	s	CERAMIC 0.1uF 25V
C43	1-164-156-11	s	CERAMIC 0.1uF 25V
C44	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C45	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C46	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C47	1-162-974-11	s	CERAMIC 0.01uF 50V
C48	1-164-156-11	s	CERAMIC 0.1uF 25V
C49	1-164-156-11	s	CERAMIC 0.1uF 25V
C50	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C51	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C52	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C53	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C54	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C55	1-104-847-11	s	TANTALUM, CHIP 22uF 20% 4V
C56	1-164-156-11	s	CERAMIC 0.1uF 25V
C57	1-164-156-11	s	CERAMIC 0.1uF 25V

(MD-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C58	1-164-156-11	s	CERAMIC 0.1uF 25V
C59	1-162-917-11	s	CERAMIC, CHIP 15PF 5% 50V
C60	1-164-156-11	s	CERAMIC 0.1uF 25V
C61	1-164-156-11	s	CERAMIC 0.1uF 25V
C62	1-164-156-11	s	CERAMIC 0.1uF 25V
C63	1-164-156-11	s	CERAMIC 0.1uF 25V
C64	1-164-156-11	s	CERAMIC 0.1uF 25V
C65	1-164-156-11	s	CERAMIC 0.1uF 25V
C66	1-164-156-11	s	CERAMIC 0.1uF 25V
C67	1-164-156-11	s	CERAMIC 0.1uF 25V
C68	1-164-156-11	s	CERAMIC 0.1uF 25V
C70	1-164-156-11	s	CERAMIC 0.1uF 25V
C71	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C72	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C73	1-164-156-11	s	CERAMIC 0.1uF 25V
C74	1-164-156-11	s	CERAMIC 0.1uF 25V
C75	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C76	1-164-156-11	s	CERAMIC 0.1uF 25V
C77	1-164-156-11	s	CERAMIC 0.1uF 25V
C78	1-164-156-11	s	CERAMIC 0.1uF 25V
C79	1-164-156-11	s	CERAMIC 0.1uF 25V
C80	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C81	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C82	1-162-974-11	s	CERAMIC 0.01uF 50V
C83	1-164-156-11	s	CERAMIC 0.1uF 25V
C84	1-164-156-11	s	CERAMIC 0.1uF 25V
C85	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C86	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C87	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C88	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C89	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C90	1-104-847-11	s	TANTALUM, CHIP 22uF 20% 4V
C91	1-164-156-11	s	CERAMIC 0.1uF 25V
C92	1-164-156-11	s	CERAMIC 0.1uF 25V
C93	1-164-156-11	s	CERAMIC 0.1uF 25V
C94	1-162-917-11	s	CERAMIC, CHIP 15PF 5% 50V
C95	1-164-156-11	s	CERAMIC 0.1uF 25V
C96	1-164-156-11	s	CERAMIC 0.1uF 25V
C97	1-164-156-11	s	CERAMIC 0.1uF 25V
C98	1-164-156-11	s	CERAMIC 0.1uF 25V
C99	1-164-156-11	s	CERAMIC 0.1uF 25V
C100	1-164-156-11	s	CERAMIC 0.1uF 25V
C101	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C102	1-162-974-11	s	CERAMIC 0.01uF 50V
C103	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C104	1-164-156-11	s	CERAMIC 0.1uF 25V
C105	1-164-156-11	s	CERAMIC 0.1uF 25V
C106	1-164-156-11	s	CERAMIC 0.1uF 25V
C107	1-164-156-11	s	CERAMIC 0.1uF 25V
C108	1-164-156-11	s	CERAMIC 0.1uF 25V
C118	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C119	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C120	1-164-156-11	s	CERAMIC 0.1uF 25V
C121	1-164-156-11	s	CERAMIC 0.1uF 25V
C122	1-164-156-11	s	CERAMIC 0.1uF 25V
C123	1-164-156-11	s	CERAMIC 0.1uF 25V
C124	1-164-156-11	s	CERAMIC 0.1uF 25V
C125	1-164-156-11	s	CERAMIC 0.1uF 25V
C126	1-164-156-11	s	CERAMIC 0.1uF 25V

(MD-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C127	1-164-156-11	s	CERAMIC 0.1uF 25V
C128	1-164-156-11	s	CERAMIC 0.1uF 25V
C129	1-164-156-11	s	CERAMIC 0.1uF 25V
C130	1-164-156-11	s	CERAMIC 0.1uF 25V
C132	1-164-156-11	s	CERAMIC 0.1uF 25V
C133	1-164-156-11	s	CERAMIC 0.1uF 25V
C134	1-164-156-11	s	CERAMIC 0.1uF 25V
C135	1-164-156-11	s	CERAMIC 0.1uF 25V
C136	1-164-156-11	s	CERAMIC 0.1uF 25V
C139	1-162-974-11	s	CERAMIC 0.01uF 50V
C151	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C152	1-104-850-11	s	CHIP,TANTALUM 6.8uF 10% 10V
C153	1-104-850-11	s	CHIP,TANTALUM 6.8uF 10% 10V
C160	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C161	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C162	1-104-850-11	s	CHIP,TANTALUM 6.8uF 10% 10V
C163	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C164	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C165	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C167	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C168	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C169	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C170	1-164-156-11	s	CERAMIC 0.1uF 25V
C171	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C173	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C174	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C175	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C176	1-164-156-11	s	CERAMIC 0.1uF 25V
C178	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C179	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C180	1-164-156-11	s	CERAMIC 0.1uF 25V
C181	1-164-156-11	s	CERAMIC 0.1uF 25V
C182	1-164-156-11	s	CERAMIC 0.1uF 25V
C183	1-104-850-11	s	CHIP,TANTALUM 6.8uF 10% 10V
C184	1-104-850-11	s	CHIP,TANTALUM 6.8uF 10% 10V
C185	1-164-156-11	s	CERAMIC 0.1uF 25V
C186	1-164-156-11	s	CERAMIC 0.1uF 25V
C187	1-104-850-11	s	CHIP,TANTALUM 6.8uF 10% 10V
C188	1-104-850-11	s	CHIP,TANTALUM 6.8uF 10% 10V
C189	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C190	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C191	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C192	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C193	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C200	1-104-847-11	s	TANTALUM, CHIP 22uF 20% 4V
C201	1-104-847-11	s	TANTALUM, CHIP 22uF 20% 4V
D1	8-759-274-67	s	IC LM4040BIM3X-5.0
D3	8-719-041-68	s	DIODE RD3.3UH-T1
D4	8-719-041-68	s	DIODE RD3.3UH-T1
FL1	1-239-950-11	s	FILTER, LOW-PASS (VIDEO)
FL2	1-409-821-11	s	PHASE SHIFTER 90
FL3	1-760-442-21	s	FILTER, TRAP
FL4	1-239-951-11	s	FILTER, LOW-PASS (VIDEO)
FL5	1-409-822-11	s	PHASE SHIFTER 90
FL6	1-239-951-11	s	FILTER, LOW-PASS (VIDEO)
FL7	1-239-946-11	s	FILTER, LOW-PASS
FL8	1-239-944-11	s	FILTER, LOW-PASS
FL9	1-411-283-11	s	FILTER, TRAP

(MD-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC1	8-759-141-60	s	IC UPA101G
IC2	8-759-141-60	s	IC UPA101G
IC3	8-759-054-61	s	IC CLC505AJE
IC4	8-759-141-60	s	IC UPA101G
IC5	8-759-054-61	s	IC CLC505AJE
IC6	8-759-141-60	s	IC UPA101G
IC12	8-759-186-39	s	IC TC74VHC74F
IC13	8-759-082-61	s	IC TC4W53FU
IC14	8-759-173-16	s	IC TL062CPW
IC16	8-759-085-67	s	IC LM339NS
IC17	8-759-180-08	s	IC TC74HC4538AFS
IC18	8-759-260-55	s	IC TLC272CPW-E05
IC19	8-759-082-61	s	IC TC4W53FU
IC20	8-759-082-61	s	IC TC4W53FU
IC21	8-759-173-16	s	IC TL062CPW
L3	1-412-029-11	s	INDUCTOR CHIP 10uH
L4	1-412-029-11	s	INDUCTOR CHIP 10uH
L5	1-412-026-11	s	INDUCTOR CHIP 1uH
L6	1-412-026-11	s	INDUCTOR CHIP 1uH
L9	1-412-029-11	s	INDUCTOR CHIP 10uH
L10	1-412-029-11	s	INDUCTOR CHIP 10uH
L11	1-412-026-11	s	INDUCTOR CHIP 1uH
L12	1-412-026-11	s	INDUCTOR CHIP 1uH
L15	1-412-029-11	s	INDUCTOR CHIP 10uH
L16	1-412-029-11	s	INDUCTOR CHIP 10uH
L20	1-412-026-11	s	INDUCTOR CHIP 1uH
L21	1-412-026-11	s	INDUCTOR CHIP 1uH
L22	1-412-026-11	s	INDUCTOR CHIP 1uH
L23	1-412-026-11	s	INDUCTOR CHIP 1uH
Q3	8-729-026-31	s	TRANSISTOR XP6435
Q4	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q5	8-729-024-56	s	TRANSISTOR 2SA1808
Q6	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q7	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q8	8-729-024-56	s	TRANSISTOR 2SA1808
Q9	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q10	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q11	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q12	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q13	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q14	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q15	8-729-117-32	s	TRANSISTOR 2SC4177
Q18	8-729-026-31	s	TRANSISTOR XP6435
Q19	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q20	8-729-024-56	s	TRANSISTOR 2SA1808
Q21	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q22	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q23	8-729-024-56	s	TRANSISTOR 2SA1808
Q24	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q25	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q26	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q27	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q28	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q29	8-729-117-32	s	TRANSISTOR 2SC4177
Q32	8-729-026-31	s	TRANSISTOR XP6435
Q33	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q34	8-729-024-56	s	TRANSISTOR 2SA1808
Q35	8-729-144-07	s	TRANSISTOR 2SC4184-T43

http://getMANUAL.com

(MD-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q36	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q37	8-729-024-56	s	TRANSISTOR 2SA1808
Q38	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q39	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q40	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q43	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q44	8-729-024-58	s	TRANSISTOR 2SA1688-5
Q45	8-729-230-38	s	TRANSISTOR 2SC4215Y
Q46	8-729-024-58	s	TRANSISTOR 2SA1688-5
Q47	8-729-928-81	s	TRANSISTOR DTC144EE
Q50	8-729-026-31	s	TRANSISTOR XP6435
Q51	8-729-024-56	s	TRANSISTOR 2SA1808
Q52	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q53	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q54	8-729-144-07	s	TRANSISTOR 2SC4184-T43
Q55	8-729-024-56	s	TRANSISTOR 2SA1808
Q60	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q61	8-729-117-32	s	TRANSISTOR 2SC4177
Q62	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q63	8-729-117-32	s	TRANSISTOR 2SC4177
Q64	8-729-928-81	s	TRANSISTOR DTC144EE
Q65	8-729-101-07	s	TRANSISTOR 2SB798
Q66	8-729-928-81	s	TRANSISTOR DTC144EE
Q67	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q68	8-729-928-81	s	TRANSISTOR DTC144EE
Q69	8-729-928-27	s	TRANSISTOR DTA144EE
Q70	8-729-807-51	s	TRANSISTOR 2SD1623-S
R5	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R6	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R7	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R8	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R9	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R10	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R11	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R12	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R13	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R14	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R15	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R16	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R18	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R20	1-218-868-11	s	CHIP, METAL 7.5K 0.50% 1/16W
R21	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R22	1-218-679-91	s	CHIP, METAL 300 0.50% 1/16W
R23	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R24	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R25	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R26	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R27	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R28	1-218-842-11	s	CHIP, METAL 620 0.50% 1/16W
R29	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R30	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R31	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R32	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R33	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R34	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R35	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R36	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R37	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W

(MD-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R38	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R39	1-218-716-11	s	METAL 10K 0.50% 1/16W
R40	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R41	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R42	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R43	1-218-675-11	s	CHIP, METAL 200 0.50% 1/16W
R44	1-218-679-91	s	CHIP, METAL 300 0.50% 1/16W
R45	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R46	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R47	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R48	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R49	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R50	1-218-842-11	s	CHIP, METAL 620 0.50% 1/16W
R51	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R52	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R53	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R54	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R55	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R56	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R57	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R58	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R59	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R60	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R61	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R62	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R63	1-216-846-11	s	METAL, CHIP 120K 5% 1/16W
R64	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R65	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R66	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R67	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R68	1-216-844-11	s	METAL, CHIP 82K 5% 1/16W
R69	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R70	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R71	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R75	1-218-866-11	s	CHIP, METAL 6.2K 0.50% 1/16W
R76	1-218-716-11	s	METAL 10K 0.50% 1/16W
R77	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R78	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R81	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R82	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R83	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R84	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R85	1-218-648-11	s	METAL 15 0.50% 1/16W
R86	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R88	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R89	1-218-864-11	s	CHIP, METAL 5.1K 0.50% 1/16W
R90	1-218-679-91	s	CHIP, METAL 300 0.50% 1/16W
R91	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R92	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R93	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R94	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R95	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R96	1-218-695-11	s	METAL 1.3K 0.50% 1/16W
R97	1-218-836-11	s	CHIP, METAL 360 0.50% 1/16W
R98	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R99	1-218-695-11	s	METAL 1.3K 0.50% 1/16W
R100	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R101	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R102	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W

(MD-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R103	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R104	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R105	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R106	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R107	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R108	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R109	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R110	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R111	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R112	1-218-836-11	s	CHIP, METAL 360 0.50% 1/16W
R113	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R114	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R115	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R116	1-218-694-11	s	METAL 1.2K 0.50% 1/16W
R117	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R118	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R119	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R120	1-216-844-11	s	METAL, CHIP 82K 5% 1/16W
R121	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R122	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R123	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R127	1-218-866-11	s	CHIP, METAL 6.2K 0.50% 1/16W
R128	1-218-716-11	s	METAL 10K 0.50% 1/16W
R129	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R130	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R133	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R134	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R135	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R136	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R137	1-218-648-11	s	METAL 15 0.50% 1/16W
R138	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R140	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R141	1-218-864-11	s	CHIP, METAL 5.1K 0.50% 1/16W
R142	1-218-679-91	s	CHIP, METAL 300 0.50% 1/16W
R143	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R144	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R145	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R146	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R147	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R148	1-218-695-11	s	METAL 1.3K 0.50% 1/16W
R149	1-218-836-11	s	CHIP, METAL 360 0.50% 1/16W
R150	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R151	1-218-695-11	s	METAL 1.3K 0.50% 1/16W
R152	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R153	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R154	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R155	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R156	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R157	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R158	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R159	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R160	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R161	1-218-732-11	s	METAL 47K 0.50% 1/16W
R162	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R163	1-218-676-11	s	METAL 220 0.50% 1/16W
R164	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R165	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R166	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R167	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W

(MD-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R168	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R169	1-216-801-11	s	METAL, CHIP 22 5% 1/16W
R170	1-216-801-11	s	METAL, CHIP 22 5% 1/16W
R171	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R172	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R190	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R191	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R192	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R198	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R199	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R200	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R201	1-218-679-91	s	CHIP, METAL 300 0.50% 1/16W
R202	1-218-829-11	s	CHIP, METAL 180 0.50% 1/16W
R203	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R204	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R205	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R206	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R207	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R208	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R209	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R210	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R211	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R225	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R227	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R228	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R240	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R241	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R242	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R243	1-218-725-11	s	METAL 24K 0.50% 1/16W
R244	1-218-864-11	s	CHIP, METAL 5.1K 0.50% 1/16W
R245	1-218-721-11	s	METAL 16K 0.50% 1/16W
R246	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R247	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R250	1-218-870-11	s	CHIP, METAL 9.1K 0.50% 1/16W
R251	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R252	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R253	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R254	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R255	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R256	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R257	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R258	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R259	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R260	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R261	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R262	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R263	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R264	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R265	1-218-727-11	s	METAL 30K 0.50% 1/16W
R266	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R267	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R268	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R269	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R270	1-218-725-11	s	METAL 24K 0.50% 1/16W
R271	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R272	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R273	1-218-720-11	s	METAL 15K 0.50% 1/16W
R274	1-218-838-11	s	CHIP, METAL 430 0.50% 1/16W
R275	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W

(MD-103 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R276	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R277	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R278	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R279	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R280	1-218-675-11	s	CHIP, METAL 200 0.50% 1/16W
R281	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R282	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R283	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R284	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R285	1-218-675-11	s	CHIP, METAL 200 0.50% 1/16W
R286	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R287	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R288	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R289	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R290	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R291	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R292	1-216-789-11	s	METAL, CHIP 2.2 5% 1/16W
R293	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R294	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R300	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R301	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R302	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R303	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
RV1	1-237-031-11	s	RES, ADJ METAL 200
RV2	1-237-036-11	s	RES, ADJ METAL 10K
RV3	1-237-036-11	s	RES, ADJ METAL 10K
RV4	1-237-036-11	s	RES, ADJ METAL 10K
RV5	1-237-033-11	s	RES, ADJ METAL 1K
RV7	1-237-030-11	s	RES, ADJ METAL 100
RV8	1-237-036-11	s	RES, ADJ METAL 10K
RV9	1-237-033-11	s	RES, ADJ METAL 1K
RV11	1-237-030-11	s	RES, ADJ METAL 100
RV12	1-237-036-11	s	RES, ADJ METAL 10K
RV13	1-237-035-11	s	RES, ADJ METAL 5K
S3	1-692-531-11	s	SWITCH, TOGGLE
X1	1-760-438-11	s	CRYSTAL 45.00MHz

SW-750 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-762-21	o	PRINTED CIRCUIT BOARD, SW-750
CN603	1-764-093-21	o	PIN, CONNECTOR (PC BOARD) 8P
RV1	1-223-958-11	s	RES, VAR, CARBON 10K (9 TYPE)
RV2	1-223-958-11	s	RES, VAR, CARBON 10K (9 TYPE)
S1	1-554-303-21	s	SWITCH, TACTILE

SW-784 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-763-21	o	PRINTED CIRCUIT BOARD, SW-784
2pcs	1-566-987-11	o	CONTACT AWG#28-32
2pcs	1-695-215-11	o	CONTACT, FEMALE
1pc	1-695-892-11	o	HOUSING, 12P
1pc	1-764-196-11	o	HOUSING, 8P
S1	1-570-985-11	s	SWITCH, TOGGLE
S2	1-570-984-11	s	SWITCH, TOGGLE
CN604	1-568-814-11	o	HOUSING, 8P
CN605	1-568-817-11	o	HOUSING, 12P

TR-90 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-586-A	o	MOUNTED CIRCUIT BOARD, TR-90
1pc	3-692-163-02	o	PANEL,TR-90 PC BOARD
1pc	3-724-753-01	o	RING
6pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C1	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C2	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C3	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C4	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C6	1-164-156-11	s	CERAMIC 0.1uF 25V
C9	1-164-392-11	s	CERAMIC 390PF 5% 50V
C10	1-162-957-11	s	CERAMIC 220PF 5% 50V
C13	1-164-156-11	s	CERAMIC 0.1uF 25V
C14	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C15	1-162-928-11	s	CERAMIC 120PF 5% 50V
C16	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C17	1-164-156-11	s	CERAMIC 0.1uF 25V
C18	1-164-264-11	s	CHIP,CERAMIC 82PF 5% 50V
C19	1-164-264-11	s	CHIP,CERAMIC 82PF 5% 50V
C20	1-164-392-11	s	CERAMIC 390PF 5% 50V
C21	1-162-957-11	s	CERAMIC 220PF 5% 50V
C24	1-164-156-11	s	CERAMIC 0.1uF 25V
C25	1-164-156-11	s	CERAMIC 0.1uF 25V
C26	1-164-156-11	s	CERAMIC 0.1uF 25V
C27	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C28	1-164-156-11	s	CERAMIC 0.1uF 25V
C29	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C30	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C31	1-162-928-11	s	CERAMIC 120PF 5% 50V
C32	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C33	1-164-156-11	s	CERAMIC 0.1uF 25V
C34	1-162-925-11	s	CERAMIC, CHIP 68PF 5% 50V
C35	1-164-264-11	s	CHIP,CERAMIC 82PF 5% 50V
C36	1-164-392-11	s	CERAMIC 390PF 5% 50V
C37	1-162-957-11	s	CERAMIC 220PF 5% 50V
C40	1-164-156-11	s	CERAMIC 0.1uF 25V
C41	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C42	1-162-974-11	s	CERAMIC 0.01uF 50V
C43	1-162-974-11	s	CERAMIC 0.01uF 50V
C44	1-164-156-11	s	CERAMIC 0.1uF 25V
C45	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C46	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C47	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C48	1-164-227-11	s	CERAMIC 0.022uF 10% 25V
C49	1-164-156-11	s	CERAMIC 0.1uF 25V
C50	1-162-959-11	s	CERAMIC 330PF 5% 50V
C51	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C52	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C53	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C54	1-162-925-11	s	CERAMIC, CHIP 68PF 5% 50V
C55	1-164-156-11	s	CERAMIC 0.1uF 25V
C57	1-164-392-11	s	CERAMIC 390PF 5% 50V
C58	1-162-957-11	s	CERAMIC 220PF 5% 50V
C59	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C61	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C62	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C63	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C65	1-162-974-11	s	CERAMIC 0.01uF 50V
C66	1-164-156-11	s	CERAMIC 0.1uF 25V
C67	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V

(TR-90 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C68	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C69	1-162-974-11	s	CERAMIC 0.01uF 50V
C200	1-162-974-11	s	CERAMIC 0.01uF 50V
C201	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C202	1-164-156-11	s	CERAMIC 0.1uF 25V
C203	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C204	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C205	1-164-156-11	s	CERAMIC 0.1uF 25V
C206	1-164-156-11	s	CERAMIC 0.1uF 25V
C207	1-164-156-11	s	CERAMIC 0.1uF 25V
C208	1-164-265-11	s	CHIP,CERAMIC 100PF 5% 50V
C210	1-162-974-11	s	CERAMIC 0.01uF 50V
C211	1-162-974-11	s	CERAMIC 0.01uF 50V
C212	1-164-156-11	s	CERAMIC 0.1uF 25V
C213	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C214	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C215	1-162-958-11	s	CERAMIC 270PF 5% 50V
C216	1-162-925-11	s	CERAMIC, CHIP 68PF 5% 50V
C217	1-164-392-11	s	CERAMIC 390PF 5% 50V
C218	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C219	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C220	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C221	1-164-156-11	s	CERAMIC 0.1uF 25V
C222	1-164-156-11	s	CERAMIC 0.1uF 25V
C223	1-164-156-11	s	CERAMIC 0.1uF 25V
C224	1-164-156-11	s	CERAMIC 0.1uF 25V
C225	1-164-265-11	s	CHIP,CERAMIC 100PF 5% 50V
C228	1-162-974-11	s	CERAMIC 0.01uF 50V
C229	1-162-974-11	s	CERAMIC 0.01uF 50V
C230	1-164-156-11	s	CERAMIC 0.1uF 25V
C231	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C232	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C233	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C234	1-164-156-11	s	CERAMIC 0.1uF 25V
C235	1-164-156-11	s	CERAMIC 0.1uF 25V
C236	1-164-460-11	s	CHIP,CERAMIC 62PF 5% 50V
C237	1-164-156-11	s	CERAMIC 0.1uF 25V
C238	1-135-164-21	s	TANTALUM, CHIP 22uF 20% 10V
C239	1-164-156-11	s	CERAMIC 0.1uF 25V
C240	1-164-156-11	s	CERAMIC 0.1uF 25V
C241	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C242	1-164-156-11	s	CERAMIC 0.1uF 25V
C243	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C244	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C245	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V
C246	1-162-957-11	s	CERAMIC 220PF 5% 50V
C247	1-162-957-11	s	CERAMIC 220PF 5% 50V
C248	1-164-156-11	s	CERAMIC 0.1uF 25V
C249	1-164-156-11	s	CERAMIC 0.1uF 25V
C250	1-164-382-11	s	CERAMIC 91PF 5% 50V
C251	1-164-156-11	s	CERAMIC 0.1uF 25V
C252	1-135-164-21	s	TANTALUM, CHIP 22uF 20% 10V
C253	1-164-156-11	s	CERAMIC 0.1uF 25V
C254	1-164-156-11	s	CERAMIC 0.1uF 25V
C255	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C256	1-164-156-11	s	CERAMIC 0.1uF 25V
C257	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C258	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C259	1-135-166-21	s	TANTALUM, CHIP 47uF 10% 10V

(TR-90 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C260	1-162-957-11	s	CERAMIC 220PF 5% 50V
C261	1-162-957-11	s	CERAMIC 220PF 5% 50V
C276	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C277	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C278	1-162-957-11	s	CERAMIC 220PF 5% 50V
C279	1-162-957-11	s	CERAMIC 220PF 5% 50V
C281	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C282	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C283	1-135-149-21	s	TANTALUM, CHIP 2.2uF 10% 10V
C284	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C285	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C286	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C287	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C288	1-164-156-11	s	CERAMIC 0.1uF 25V
C301	1-162-957-11	s	CERAMIC 220PF 5% 50V
CF1	1-578-068-12	s	FILTER, CERAMIC 7.100MHz
CF2	1-760-447-11	s	FILTER, CERAMIC 6.200MHz
CF3	1-578-067-11	s	FILTER, CERAMIC 6.700MHz
CF4	1-760-446-11	s	FILTER, CERAMIC 5.600MHz
CF200	1-760-445-11	s	FILTER, CERAMIC 4.300MHz
CF201	1-760-445-11	s	FILTER, CERAMIC 4.300MHz
CF202	1-760-443-11	s	FILTER, CERAMIC 3.600MHz
CF203	1-760-443-11	s	FILTER, CERAMIC 3.600MHz
D1	8-719-820-41	s	DIODE 1SS302
D2	8-719-041-39	s	DIODE KV1470
D3	8-719-820-41	s	DIODE 1SS302
D4	8-719-820-41	s	DIODE 1SS302
D5	8-719-041-39	s	DIODE KV1470
D6	8-719-820-41	s	DIODE 1SS302
D7	8-719-820-41	s	DIODE 1SS302
D8	8-719-041-39	s	DIODE KV1470
D9	8-719-820-41	s	DIODE 1SS302
D10	8-719-041-68	s	DIODE RD3.3UH-T1
D11	8-719-820-41	s	DIODE 1SS302
D12	8-719-041-39	s	DIODE KV1470
D13	8-719-820-41	s	DIODE 1SS302
D16	8-719-404-35	s	DIODE MA141WK
D17	8-719-157-33	s	DIODE RD6.2M-B
D18	8-719-041-68	s	DIODE RD3.3UH-T1
D19	8-759-274-67	s	IC LM4040BIM3X-5.0
D20	8-719-041-68	s	DIODE RD3.3UH-T1
D21	8-719-041-68	s	DIODE RD3.3UH-T1
D200	8-719-024-81	s	DIODE 1SS300-TE85L
D201	8-719-029-67	s	DIODE RD5.6UJN-T1
D202	8-719-159-85	s	DIODE RD2.0MB
D203	8-719-159-85	s	DIODE RD2.0MB
FL200	1-239-942-11	s	FILTER, LOW-PASS
FL201	1-239-941-11	s	FILTER, BAND PASS 3.0MHz
FL202	1-239-940-11	s	FILTER, BAND PASS 2.5MHz
IC1	8-759-085-67	s	IC LM339NS
IC2	8-759-209-15	s	IC TC4SU69F
IC3	8-759-008-88	s	IC MC14020BF
IC4	8-759-209-90	s	IC TC4S71F
IC5	8-759-209-90	s	IC TC4S71F
IC6	8-759-008-87	s	IC MC14018BF
IC7	8-759-260-55	s	IC TLC272CPW-E05
IC8	8-759-209-90	s	IC TC4S71F
IC200	8-759-271-14	s	IC TA8129Z
IC201	8-759-075-70	s	IC TA75S393F

(TR-90 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC202	8-759-271-14	s	IC TA8129Z
IC204	8-759-260-55	s	IC TLC272CPW-E05
IC205	8-759-082-61	s	IC TC4W53FU
IC206	8-759-811-40	s	IC LA1140
IC207	8-759-811-40	s	IC LA1140
L1	1-412-029-11	s	INDUCTOR CHIP 10uH
L2	1-412-029-11	s	INDUCTOR CHIP 10uH
L3	1-412-029-11	s	INDUCTOR CHIP 10uH
L4	1-412-029-11	s	INDUCTOR CHIP 10uH
L6	1-412-029-11	s	INDUCTOR CHIP 10uH
L200	1-412-029-11	s	INDUCTOR CHIP 10uH
L201	1-412-029-11	s	INDUCTOR CHIP 10uH
L202	1-412-029-11	s	INDUCTOR CHIP 10uH
L203	1-412-029-11	s	INDUCTOR CHIP 10uH
L204	1-410-146-11	s	INDUCTOR 22uH
L205	1-410-154-11	s	INDUCTOR 100uH
L206	1-412-029-11	s	INDUCTOR CHIP 10uH
L207	1-410-146-11	s	INDUCTOR 22uH
L208	1-410-154-11	s	INDUCTOR 100uH
L209	1-412-029-11	s	INDUCTOR CHIP 10uH
LV1	1-409-825-11	s	COIL, VAR
LV2	1-409-825-11	s	COIL, VAR
LV3	1-409-825-11	s	COIL, VAR
LV4	1-409-826-11	s	COIL, VAR
LV200	1-409-827-11	s	COIL, VAR
LV201	1-409-827-11	s	COIL, VAR
Q1	8-729-117-32	s	TRANSISTOR 2SC4177
Q3	8-729-117-32	s	TRANSISTOR 2SC4177
Q4	8-729-117-32	s	TRANSISTOR 2SC4177
Q6	8-729-117-32	s	TRANSISTOR 2SC4177
Q7	8-729-200-87	s	TRANSISTOR 2SC2714Y
Q8	8-729-122-63	s	TRANSISTOR 2SA1226
Q9	8-729-200-87	s	TRANSISTOR 2SC2714Y
Q10	8-729-122-63	s	TRANSISTOR 2SA1226
Q11	8-729-200-87	s	TRANSISTOR 2SC2714Y
Q12	8-729-122-63	s	TRANSISTOR 2SA1226
Q13	8-729-117-32	s	TRANSISTOR 2SC4177
Q15	8-729-117-32	s	TRANSISTOR 2SC4177
Q16	8-729-200-87	s	TRANSISTOR 2SC2714Y
Q17	8-729-117-32	s	TRANSISTOR 2SC4177
Q18	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q19	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q20	8-729-117-32	s	TRANSISTOR 2SC4177
Q21	8-729-117-32	s	TRANSISTOR 2SC4177
Q22	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q23	8-729-928-81	s	TRANSISTOR DTC144EE
Q24	8-729-928-81	s	TRANSISTOR DTC144EE
Q25	8-729-928-81	s	TRANSISTOR DTC144EE
Q135	8-729-928-81	s	TRANSISTOR DTC144EE
Q136	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q137	8-729-928-81	s	TRANSISTOR DTC144EE
Q139	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q141	8-729-117-32	s	TRANSISTOR 2SC4177
Q142	8-729-117-32	s	TRANSISTOR 2SC4177
Q143	8-729-117-32	s	TRANSISTOR 2SC4177
Q144	8-729-928-81	s	TRANSISTOR DTC144EE
Q200	8-729-200-87	s	TRANSISTOR 2SC2714Y
Q201	8-729-117-32	s	TRANSISTOR 2SC4177

(TR-90 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q202	8-729-117-32	s	TRANSISTOR 2SC4177
Q203	8-729-928-81	s	TRANSISTOR DTC144EE
Q204	8-729-026-31	s	TRANSISTOR XP6435
Q205	8-729-117-32	s	TRANSISTOR 2SC4177
Q206	8-729-026-31	s	TRANSISTOR XP6435
Q207	8-729-117-32	s	TRANSISTOR 2SC4177
R1	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R2	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R3	1-218-720-11	s	METAL 15K 0.50% 1/16W
R4	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R5	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R6	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R7	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R8	1-218-717-11	s	CHIP, METAL 11K 0.50% 1/16W
R9	1-218-688-11	s	METAL 680 0.50% 1/16W
R10	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R15	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R16	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R17	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R18	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R19	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R20	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R21	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R22	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R23	1-218-720-11	s	METAL 15K 0.50% 1/16W
R24	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R25	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R26	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R27	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R28	1-218-688-11	s	METAL 680 0.50% 1/16W
R29	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R34	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R35	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R36	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R37	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R38	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R39	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R40	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R41	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R42	1-218-842-11	s	CHIP, METAL 620 0.50% 1/16W
R43	1-218-874-11	s	CHIP, METAL 13K 0.50% 1/16W
R44	1-216-818-11	s	METAL, CHIP 560 5% 1/16W
R45	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R46	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R47	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R48	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R49	1-216-793-11	s	METAL 4.7 5% 1/16W
R50	1-216-793-11	s	METAL 4.7 5% 1/16W
R51	1-247-804-11	s	CARBON 75 5% 1/4W
R52	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R53	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R54	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R55	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R56	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R57	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R58	1-218-688-11	s	METAL 680 0.50% 1/16W
R59	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R64	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W

(TR-90 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R65	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R66	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R67	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R68	1-218-684-11	s	CHIP, METAL 470 0.50% 1/16W
R69	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R70	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R71	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R72	1-218-716-11	s	METAL 10K 0.50% 1/16W
R73	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R74	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R75	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R76	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R77	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R78	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R79	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R80	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R81	1-216-863-11	s	METAL 3.3M 5% 1/16W
R82	1-216-851-11	s	METAL, CHIP 330K 5% 1/16W
R83	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R84	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R85	1-216-850-11	s	METAL, CHIP 270K 5% 1/16W
R86	1-218-717-11	s	CHIP, METAL 11K 0.50% 1/16W
R87	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R88	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R89	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R90	1-218-901-11	s	CHIP, METAL 180K 0.50% 1/16W
R91	1-218-716-11	s	METAL 10K 0.50% 1/16W
R92	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R93	1-218-720-11	s	METAL 15K 0.50% 1/16W
R94	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R95	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R96	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R97	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R98	1-218-874-11	s	CHIP, METAL 13K 0.50% 1/16W
R99	1-218-688-11	s	METAL 680 0.50% 1/16W
R100	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R101	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R102	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R103	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R104	1-218-842-11	s	CHIP, METAL 620 0.50% 1/16W
R108	1-216-815-11	s	METAL, CHIP 330 5% 1/16W
R110	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R111	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R112	1-216-847-11	s	METAL, CHIP 150K 5% 1/16W
R113	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R114	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R115	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R116	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R117	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R118	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R119	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R120	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R123	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R124	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R125	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R126	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R127	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R128	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R129	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W

(TR-90 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R130	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R131	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R133	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R134	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R200	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R201	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R202	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R203	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R204	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R205	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R206	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R207	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R208	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R209	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R210	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R212	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R213	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R214	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R215	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R216	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R217	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R218	1-218-864-11	s	CHIP, METAL 5.1K 0.50% 1/16W
R219	1-218-864-11	s	CHIP, METAL 5.1K 0.50% 1/16W
R220	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R221	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R222	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R223	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R224	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R225	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R226	1-218-723-11	s	METAL 20K 0.50% 1/16W
R227	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R228	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R229	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R231	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R232	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R233	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R234	1-216-822-11	s	METAL, CHIP 1.2K 5% 1/16W
R235	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R236	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R237	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R238	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R239	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R240	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R241	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R242	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R243	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R244	1-218-692-11	s	METAL, CHIP 1K 0.50% 1/16W
R245	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R246	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R248	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R249	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R250	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R251	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R254	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R255	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R256	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R257	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R258	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R259	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W

(TR-90 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R260	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R261	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R262	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R263	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R264	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R265	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R266	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R268	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R269	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R270	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R271	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R274	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R275	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R276	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R277	1-216-838-11	s	METAL, CHIP 27K 5% 1/16W
R278	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R279	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R280	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R281	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R282	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R283	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R284	1-216-840-11	s	METAL, CHIP 39K 5% 1/16W
R285	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R306	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R307	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R311	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R312	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R317	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R318	1-218-889-11	s	CHIP, METAL 56K 0.50% 1/16W
R319	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R320	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R321	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R350	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R351	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R352	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R353	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R354	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R355	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R356	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R357	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R400	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R401	1-218-889-11	s	CHIP, METAL 56K 0.50% 1/6W
RV1	1-237-036-11	s	RES, ADJ METAL 10K
RV2	1-237-036-11	s	RES, ADJ METAL 10K
RV3	1-237-036-11	s	RES, ADJ METAL 10K
RV200	1-237-035-11	s	RES, ADJ METAL 5K
T200	1-409-833-11	s	COIL, TUNING
T201	1-409-832-11	s	COIL, TUNING
T202	1-409-829-11	s	COIL, TUNING
T203	1-409-828-11	s	COIL, TUNING
X1	1-527-997-21	s	VIBRATOR, CRYSTAL 32.768kHz

```
-----
FRAME
-----
Ref. No.
or Q'ty  Part No.    SP Description

       ⚠ A-8272-598-A s CONVERTER, AC.DC/DC
         1-239-963-42 s FILTER, MPX
         1-775-772-11 o WIRE, FLEXIBLE CARD (20 CORE)
         1-775-773-11 o WIRE, FLEXIBLE CARD (20 CORE)
         1-955-074-11 o HARNESS, SUB (CCZ)

CN101  ⚠ 1-561-844-00 s CONNECTOR, COAXIAL "TRIAX"(CE)
       ⚠ 1-565-797-12 s CONNECTOR, DOUBLE COAXIAL
                                          "TRIAX"(J)
       ⚠ 1-565-801-11 s CONNECTOR, DOUBLE COAXIAL
                                          "TRIAX"(UC)
CN102    1-955-388-11 o HARNESS, SUB (COAX)
CN103    1-561-781-11 s CONNECTOR, BNC, FEMALE
                                    "PROMPT/GENLOCK"
CN104    1-561-781-11 s CONNECTOR, BNC, FEMALE "RET OUT"
CN105    1-564-603-11 s CONNECTOR (WITH DC SW) 4P, MALE
                                             "DC IN"

CN106    1-565-072-11 s CONNECTOR, 4P, FEMALE "DC OUT"
CN107    1-563-159-11 s CONNECTOR, 5P, FEMALE "INCOM"
CN108    1-509-176-31 s CONNECTOR, XLR 3P, MALE (J)
         1-509-184-31 s CONNECTOR, XLR 3P, FEMALE(UC,CE)
CN109    1-563-833-11 s CONNECTOR 6P FEMALE "RET CONT"
         1-563-828-11 s CONTACT, FEMALE AWG#26-#30
CN111    1-562-244-00 o CONNECTOR, 26P, MALE "VTR"

TO CN1/FL-180 BOARD
         1-562-211-11 o HOUSING, 3P
         1-562-210-11 o CONTACT, FEMALE AWG18-22
TO CN2/PS-434 BOARD
         1-580-583-11 o HOUSING, 14P
         1-580-599-11 o CONTACT, FEMALE AWG26-30
TO CN3/PS-434 BOARD
         1-580-584-11 o HOUSING, 16P
         1-580-599-11 o CONTACT, FEMALE AWG26-30
TO CN9/MB-605 BOARD
         1-764-200-11 o HOUSING, 14P
         1-695-215-11 o CONTACT, FEMALE
TO CN14/MB-605 BOARD
         1-764-194-11 o HOUSING, 4P
         1-695-215-11 o CONTACT, FEMALE

TO CN15/MB-605 BOARD
         1-764-193-11 o HOUSING, 3P
         1-695-215-11 o CONTACT, FEMALE
TO CN16/MB-605 BOARD
         1-695-213-11 o HOUSING 7P
         1-695-215-11 o CONTACT, FEMALE
TO CN17/MB-605 BOARD
         1-764-200-11 o HOUSING, 14P
         1-695-215-11 o CONTACT, FEMALE
TO CN18/MB-605 BOARD
         1-695-214-11 o HOUSING, 15P
         1-695-215-11 o CONTACT, FEMALE
TO CN19/MB-605 BOARD
         1-695-892-11 o HOUSING, 12P
         1-695-215-11 o CONTACT, FEMALE

TO CN20/MB-605 BOARD
         1-764-195-11 o HOUSING, 5P
         1-695-215-11 o CONTACT, FEMALE
TO CN22/MB-605 BOARD
         1-695-212-11 o HOUSING, 6P
         1-695-215-11 o CONTACT, FEMALE
TO CN21/MB-605 BOARD
         1-764-194-11 o HOUSING, 4P
         1-695-215-11 o CONTACT, FEMALE
TO CN23/MB-605 BOARD
         1-764-196-11 o HOUSING, 8P
         1-695-215-11 o CONTACT, FEMALE
```

```
(FRAME)

Ref. No.
or Q'ty  Part No.    SP Description

TO CN24/MB-605 BOARD
         1-764-200-11 o HOUSING, 14P
         1-695-215-11 o CONTACT, FEMALE
TO CN25/MB-605 BOARD
         1-764-198-11 o HOUSING, 11P
         1-695-215-11 o CONTACT, FEMALE
TO CN29/MB-605 BOARD
         1-695-891-11 o HOUSING, 10P
         1-695-215-11 o CONTACT, FEMALE
TO CN30/MB-605 BOARD
         1-764-197-11 o HOUSING, 9P
         1-695-215-11 o CONTACT, FEMALE
TO CN31/MB-605 BOARD
         1-764-192-11 o HOUSING, 2P
         1-695-215-11 o CONTACT, FEMALE

TO CN202/CN-1190 BOARD
         1-764-200-11 o HOUSING, 14P
         1-695-215-11 o CONTACT, FEMALE
TO CN601/CN-1164 BOARD
         1-764-196-11 o HOUSING, 8P
         1-695-215-11 o CONTACT, FEMALE

F101   ⚠ 1-576-231-41 s FUSE (H.B.C.) 250A T4AH
       ⚠ 1-533-191-11 s HOLDER, FUSE

J101     1-507-251-99 s JACK "EARPHONE"

S101     1-762-548-11 s SWITCH, TOGGLE "POWER"
```

4-4. Supplied Accessories

Ref. No. or Q'ty	Part No.	SP	Description
1	A-6772-374-A	s	BELT ASSY, SHOULDER
1	1-955-388-11	o	HARNESS, SUB (COAX)
2	3-692-186-01	s	HOLDER,CABLE
1	3-694-183-01	s	SPACER, BATTERY
4	7-682-547-09	s	SCREW +B 3X6

4-5. Tools and Fixtures

Part No.	SP	Description
J-6395-020-A	o	EXTENSION BOARD EX-511
J-6395-040-A	o	EXTENSION BOARD EX-464

http://getMANUAL.com

Section 5
Semiconductor Pin Assignments

ここに記載されている半導体は，それぞれの機能を等価的に表したものです。　なお，互換性のない型名を併記していることがありますので，部品を交換するときは，Spare Partsの章を参照してください。
等価回路はＩＣメーカーのデータブックに従いました。

Semiconductors of which functions are equivalent are described here. For parts replacement, refer to the section of Spare Parts in this manual. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

DIODE **PAGE**

1SS226 5-2
1SS300 5-2
1SS302 5-2
1T363 5-2

CL-200HR 5-2

HSM107S 5-2
HSM88WA 5-2

KV1470 5-2

MA141WK 5-2

RD ? ?M-B ? 5-2
RD ? ?M-B 5-2
RD ? ?MB 5-2
RD ? ?UH 5-2
RD ? ?UJN 5-2

SC802-04 5-2

TRANSISTOR **PAGE**

2SA1162G 5-2
2SA1226 5-2
2SA1611 5-2
2SA1688 5-2
2SA1808 5-2
2SA811A 5-2
2SB1115A 5-2
2SB624 5-2
2SB798 5-2
2SC2714Y 5-2
2SC2758 5-2
2SC3115 5-2
2SC4177-L6 5-2
2SC4184 5-2
2SC4215 5-2
2SD1615A 5-2
2SD1623 5-2
2SD596-DV5 5-2
2SK852-X2 5-2

DTA144EE 5-2
DTA144EUA 5-2
DTC144EE 5-2
DTC144EUA 5-2

SGM2016M 5-2

XP6435 5-2
XP6534 5-2

IC **PAGE**

CA3102M 5-3
CLC505AJE 5-3
CXA1165M 5-3
CXA1432M 5-3

HD14053BFP 5-3

LA1140 5-4
LM339NS 5-4
LM358PS 5-4
LM4040BIM3 5-4

M51132FP 5-4
M52313SP 5-5
MC14018BF 5-4
MC14020BF 5-5
MC14023BF 5-5
MC74HC00AF 5-5

NJM4556M 5-5
NJM4558V 5-5

PC410 5-6
PCF8574T 5-6

SN75158PS 5-6

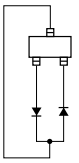
TA75S393F 5-6
TA8129Z 5-6
TC4S01F 5-6
TC4S30F 5-7
TC4S69F 5-7
TC4S71F 5-7
TC4S81F 5-7
TC4SU69F 5-7
TC4W53FU 5-7
TC74HC4538AFS 5-7
TC74VHC74F 5-8
TL062CPW 5-8
TLC272CPW 5-8

UPA101G 5-8
UPC393G2 5-8

X24C02S-3.0 5-8

DIODE

TOP VIEW

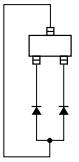


1SS226
1SS302
HSM107S

TOP VIEW

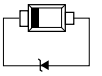
RD ? ?M-B ?
RD ? ?M-B
RD ? ?MB

TOP VIEW



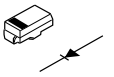
1SS300
HSM88WA

TOP VIEW



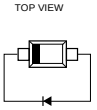
RD ? ?UH
RD ? ?UJN

TOP VIEW

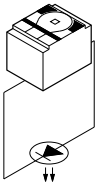


SC802-04

TOP VIEW

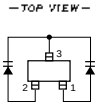


1T363



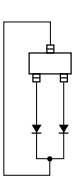
CL-200HR ; RED

TOP VIEW



KV1470

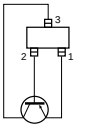
TOP VIEW



MA141WK

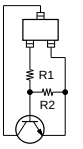
TRANSISTOR

TOP VIEW



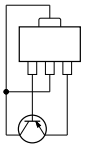
2SA1162G
2SA1226
2SA1611
2SA1688
2SA1808
2SA811A
2SB624

TOP VIEW

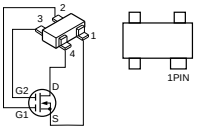


DTC144EE
(R1=47K,R2=47K)
DTC144EUA
(R1=47K,R2=47K)

TOP VIEW

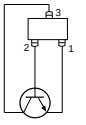


2SB1115A
2SB798



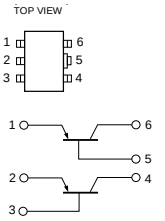
SGM2016M

TOP VIEW



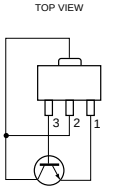
2SC2714Y
2SC2758
2SC3115
2SC4177-L6
2SC4184
2SC4215
2SD596-DV5

TOP VIEW



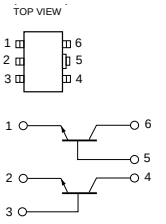
XP6435

TOP VIEW



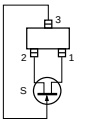
2SD1615A
2SD1623

TOP VIEW



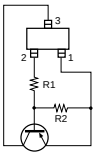
XP6534

TOP VIEW



2SK852-X2

TOP VIEW



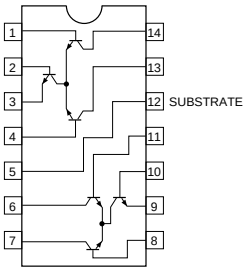
DTA144EE
(R1=47K,R2=47K)
DTA144EUA
(R1=47K,R2=47K)

IC

CA3102M (RCA) FLAT PACKAGE

HIGH FREQ.DIFFERNTIAL AMPLIFER

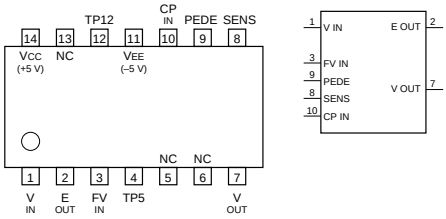
—TOP VIEW—



CXA1432M (SONY) FLAT PACKAGE

VIDEO SIGNAL CLAMPER

— TOP VIEW —

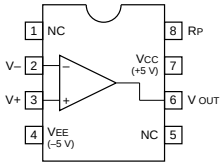


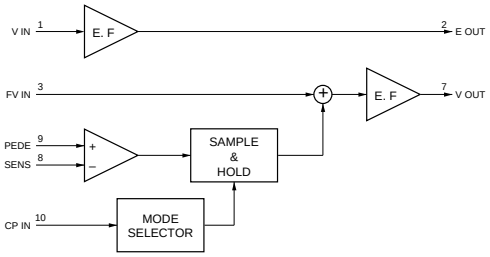
CP IN	; CLAMP PULSE INPUT
E OUT	; BUFFER AMP OUTPUT
FV IN	; FLOATING VIDEO SIGNAL INPUT
PEDE	; CLAMP LEVEL DC INPUT
SENS	; CLAMP POINT SIGNAL INPUT
TP5, TP12	; FOR TEST
V IN	; VIDEO SIGNAL INPUT
V OUT	; VIDEO SIGNAL OUTPUT

CLC505AJE (COMLINEAR) FLAT PACKAGE

OPERATIONAL AMPLIFIER

— TOP VIEW —

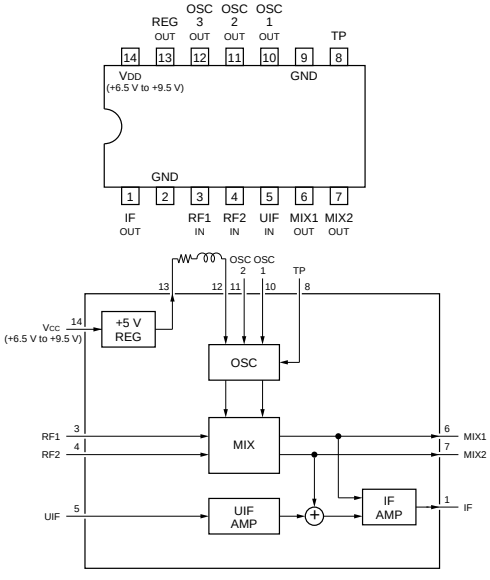




CXA1165M (SONY) FLAT PACKAGE

CATV VHF TUNER

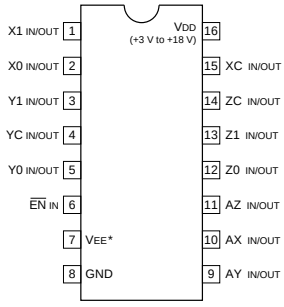
— TOP VIEW —



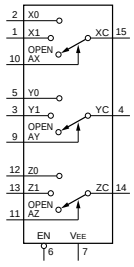
HD14053BFP (HITACHI) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS

— TOP VIEW —



VEE*; VDD – VEE + 3 V + 18 V



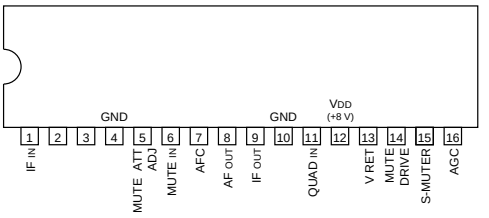
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

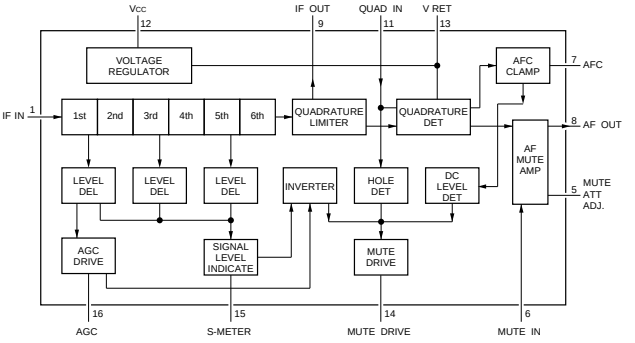
CONT. INPUTS		ON
EN	A (X, Y, Z)	CHANNEL
0	0	0
0	1	1
1	X	OPEN

LA1140 (SANYO)

IF AMP, LIMITTER, DETECTOR, MUTING, + FM CS

— PRINTED SIDE VIEW —

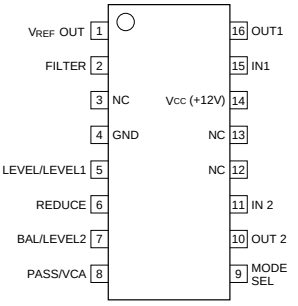


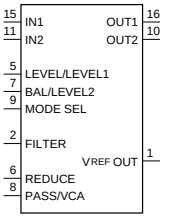


M51132FP (MITSUBISHI) FLAT PACKAGE

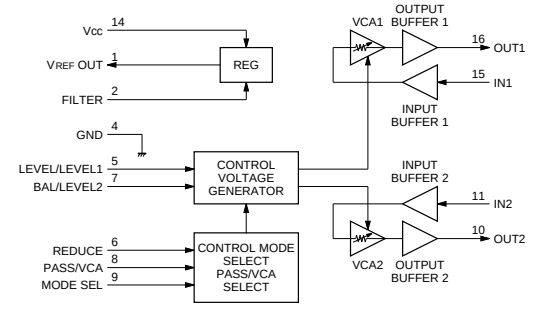
2-CHANNEL ELECTORONIC LEVEL CONTROL

—TOP VIEW—





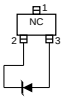
BAL/LEVEL2	; BALANCE/LEVEL2 CONTROL
FILTER	; FILTER
IN1	; INPUT 1
IN2	; INPUT 2
MODE SEL	; MODE SELECT
OUT1	; OUTPUT 1
OUT2	; OUTPUT 2
PASS/VCA	; PASS/VCA CONTROL SWITCH
REDUCE	; SWITCHING NOISE REDUCE
LEVEL/LEVEL1	; LEVEL/LEVEL1 CONTROL
VREF OUT	; REFERENCE VOLTAGE OUTPUT



LM4040BIM3 (NS)

PRECISION MICROPOWER SHUNT VOLTAGE REFERENCE

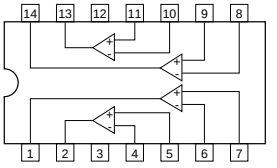
— TOP VIEW —



LM339NS (TI) FLAT PACKAGE

QUAD COMPARATORS

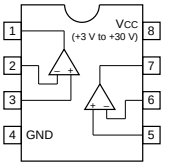
—TOP VIEW—



LM358PS (TI) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIERS

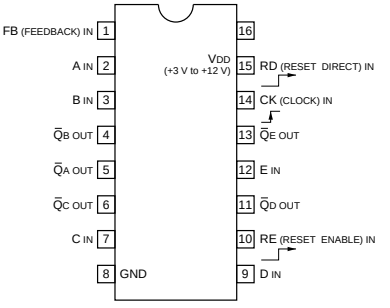
— TOP VIEW —

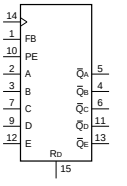


MC14018BF (MOTOROL) FLAT PACKAGE

C-MOS RESETTABLE DIVIDE-BY-N COUNTER

— TOP VIEW —



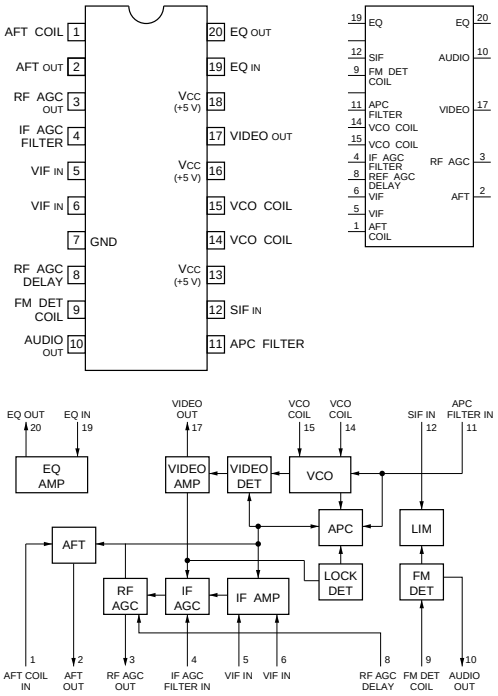


DIVIDE BY	CONNECT TO FB INPUT	VIA	RESULT FROM EACH Q̄ OUTPUT
10	Q̄E	DIRECT	5 COUNTS HIGH, 5 COUNTS LOW
9	Q̄D, Q̄E	AND GATE	5 COUNTS HIGH, 4 COUNTS LOW
8	Q̄D	DIRECT	4 COUNTS HIGH, 4 COUNTS LOW
7	Q̄C, Q̄D	AND GATE	4 COUNTS HIGH, 3 COUNTS LOW
6	Q̄C	DIRECT	3 COUNTS HIGH, 3 COUNTS LOW
5	Q̄B, Q̄C	AND GATE	3 COUNTS HIGH, 2 COUNTS LOW
4	Q̄B	DIRECT	2 COUNTS HIGH, 2 COUNTS LOW
3	Q̄A, Q̄B	AND GATE	2 COUNTS HIGH, 1 COUNTS LOW
2	Q̄A	DIRECT	1 COUNTS HIGH, 1 COUNTS LOW

M52313SP (MITSUBISHI)

PUL VIF/SIF

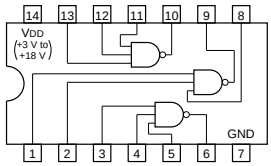
— TOP VIEW —

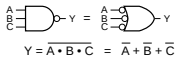


MC14023BF (MOTOROLA) FLAT PACKAGE

C-MOS 3-INPUT NAND GATE

— TOP VIEW —





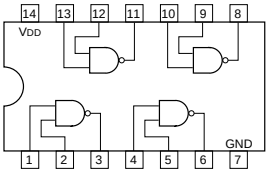
A	B	C	Y
X	X	0	1
X	0	X	1
0	X	X	1
1	1	1	0

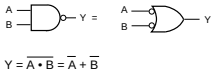
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

MC74HC00AF (MOTOROLA) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATES

—TOP VIEW—





A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

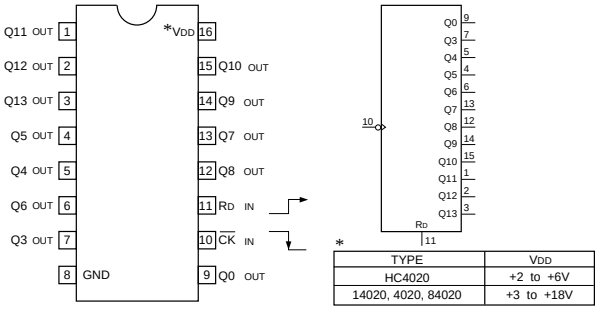
NOTE:

TYPE	VDD
TC74AC00 TYPE TC74VHC00	+2 to +5.5V
MC74HCT00N	+5V
74ACT00 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

MC14020BF (MOTOROLA) FLAT PACKAGE

C-MOS 14-STAG RIPPLE-CARRY BINARY COUNTER/DRIVER

—TOP VIEW—



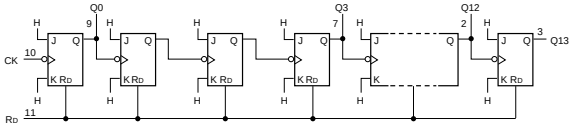
TYPE	VDD
HC4020	+2 to +6V
14020, 4020, 84020	+3 to +18V

COUNT		BINARY OUTPUTS											
		Q13	Q12	Q11	Q10	Q9	Q8	Q7	Q6	Q5	Q4	Q3	Q0
0	0000	0	0	0	0	0	0	0	0	0	0	0	0
1	0001	0	0	0	0	0	0	0	0	0	0	0	1
2	0002	0	0	0	0	0	0	0	0	0	0	1	0
3	0003	0	0	0	0	0	0	0	0	0	0	1	1
4	0004	0	0	0	0	0	0	0	0	0	1	0	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
16380	4FFC	1	1	1	1	1	1	1	1	1	1	1	0
16381	4FFD	1	1	1	1	1	1	1	1	1	1	1	1
16382	4FFE	1	1	1	1	1	1	1	1	1	1	1	0
16383	4FFF	1	1	1	1	1	1	1	1	1	1	1	1

IN HEXADECIMAL
IN DECIMAL

0 ; LOW LEVEL
1 ; HIGH LEVEL

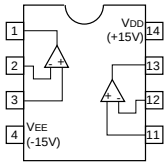
RD	Q13-Q0
1	ALL LOW
0	COUNT



NJM4556M (JRC) FLAT PACKAGE

OPERATIONAL AMPLIFIER

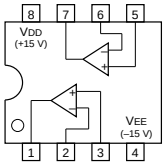
—TOP VIEW—



NJM4558V (JRC) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIER

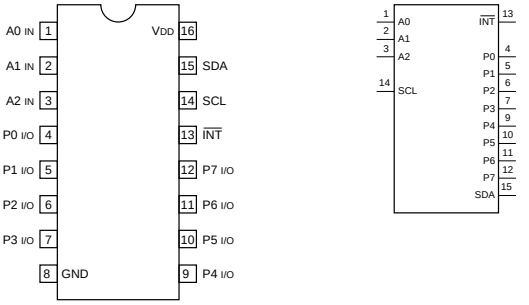
— TOP VIEW —



PCF8574T (PHILIPS)

C-MOS REMOTE 8-BIT I/O EXPANDER

— TOP VIEW —



INPUT

A0 - A2 ; ADDRESS INPUT

SCL ; SYSTEM CLOCK LINE

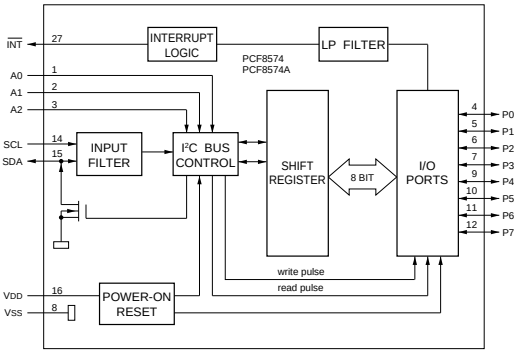
OUTPUT

$\overline{INT}$; INTERRUPT OUTPUT

SDA ; SERIAL DATA LINE

INPUT/OUTPUT

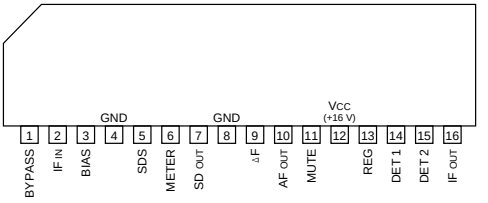
P0 - P7 ; 8-BITS QUASI-BIDIRECTIONAL I/O PORT

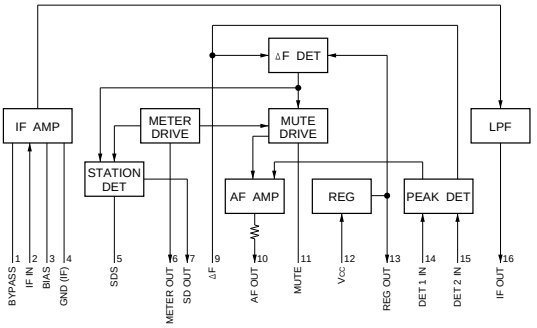


TA8129Z (TOSHIBA)

FM IF SYSTEM (DIFFERENTIAL PEAK DETECT)

— SIDE VIEW —

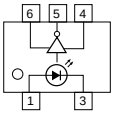




PC410 (SHARP) FLAT PACKAGE

OPIC-OUTPUT PHOTO COUPLER

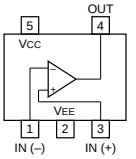
—TOP VIEW—



TA75S393F (TOSHIBA)

SINGLE COMPARATOR

— TOP VIEW —



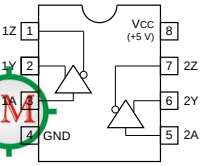
VCC ; +1 V to +18 V or +2 V to +36 V

VEE ; –1 V to –18 V

SN75158PS (TI)

DUAL DIFFERENTIAL LINE DRIVE

— TOP VIEW —

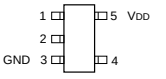


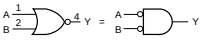
TC4S01F (TOSHIBA) CHIP PACKAGE

C-MOS 2-INPUT NOR GATE

(SCALE 6/1)

—TOP VIEW—





$Y = \overline{A + B} = \overline{A} \cdot \overline{B}$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

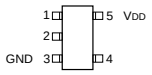
0 ; LOW LEVEL

1 ; HIGH LEVEL

TYPE	VDD
4S01F	+3 to +18V
7S02F	+2 to +6V
7S02FU	
7SH02FU	

TC4S30F (TOSHIBA) CHIP PACKAGE
C-MOS 2-INPUT EXCLUSIVE OR GATE

(SCALE 6/1)
—TOP VIEW—



$Y = \overline{A} \cdot B + A \cdot \overline{B}$

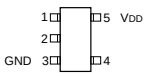
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

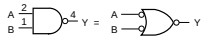
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
7S86FU 7S86F	+2 to +6V
4S30F	+3 to +18V

TC4S81F (TOSHIBA) CHIP PACKAGE
C-MOS 2-INPUT AND GATE

(SCALE 6/1)
—TOP VIEW—





$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

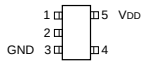
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

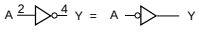
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
7S08F 7S08FU	+2 to +6V
4S81F 14S81F	+3 to +18V
7SH08FU	–2 to +5.5V

TC4S69F (TOSHIBA) CHIP PACKAGE
TC4SU69F (TOSHIBA) CHIP PACKAGE
C-MOS INVERTER

(SCALE 6/1)
—TOP VIEW—





$Y = \overline{A}$

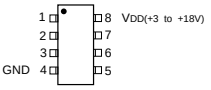
A	Y
0	1
1	0

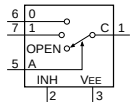
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
7S04F 7SU04F	+2 to +6V
4S69F 4SU69F	+3 to +18V
7SH04FU	+2 to +5.5V

TC4W53FU (TOSHIBA) CHIP PACKAGE
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER

(SCALE 3/1)
—TOP VIEW—



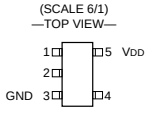


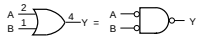
CONT.INPUT		ON
INH	A	CHANNEL
0	0	0
0	1	1
1	X	OPEN

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

TC4S71F (TOSHIBA) CHIP PACKAGE
C-MOS 2-INPUT OR GATE

(SCALE 6/1)
—TOP VIEW—





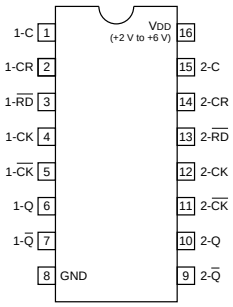
$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

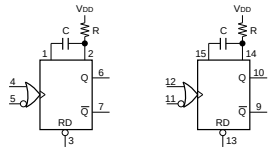
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

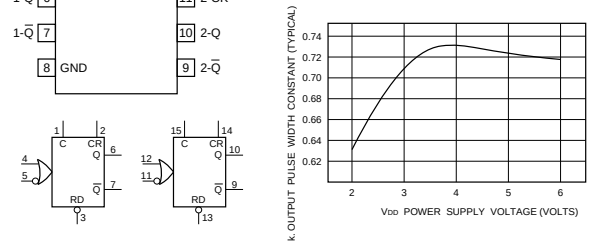
TYPE	VDD
7S32F 7S32FU	+2 to +6V
4S71F	+3 to +18V
7SH32FU	–2 to +5.5V

TC74HC4538AFS (TOSHIBA) FLAT PACKAGE
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
— TOP VIEW —

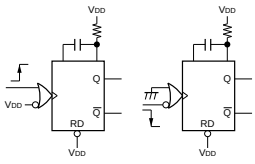




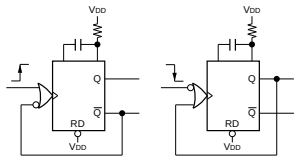
OUTPUT PULSE WIDTH = k · C · R



RETRIGGERABLE M. M. V



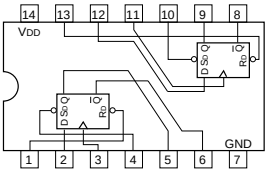
NON-RETRIGGERABLE M. M. V



TC74VHC74F (TOSHIBA) FLAT PACKAGE

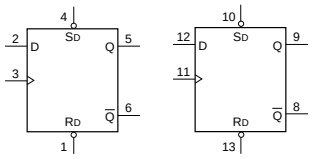
C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET

—TOP VIEW—



INPUTS				OUTPUTS	
$\overline{SD}$	$\overline{RD}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE



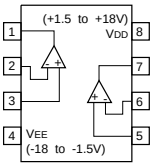
NOTE:

TYPE	VDD
HCT/ACT	+5V
TC74AC/VHC	+2 to +5.5V
OTHERS	+2 to +6V

TL062CPW (TI) FLAT PACKAGE

OPRATIONAL AMPLIFER
(J FET INPUT)

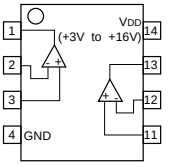
—TOP VIEW—



TLC272CPW (TI)

OPERATIONAL AMPLIFIER

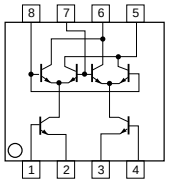
—TOP VIEW—



UPA101G (NEC) FLAT PACKAGE

TRANSISTOR ARRAY

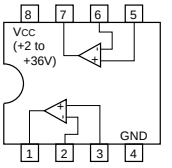
—TOP VIEW—



UPC393G2 (NEC) FLAT PACKAGE

DUAL VOLTAGE COMPARATORS

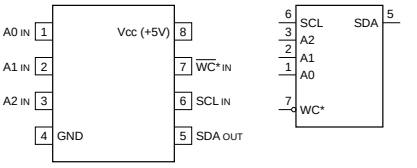
—TOP VIEW—

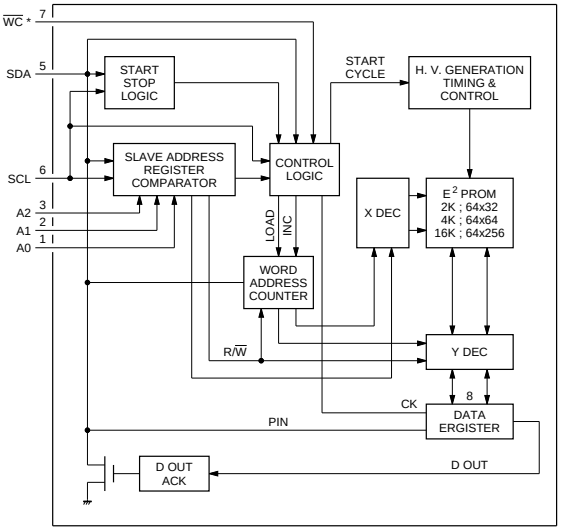


X24C02S-3.0 (XICOR) (2K BIT) FLAT PACKAGE

C-MOS SERIAL EEPROM

—TOP VIEW—

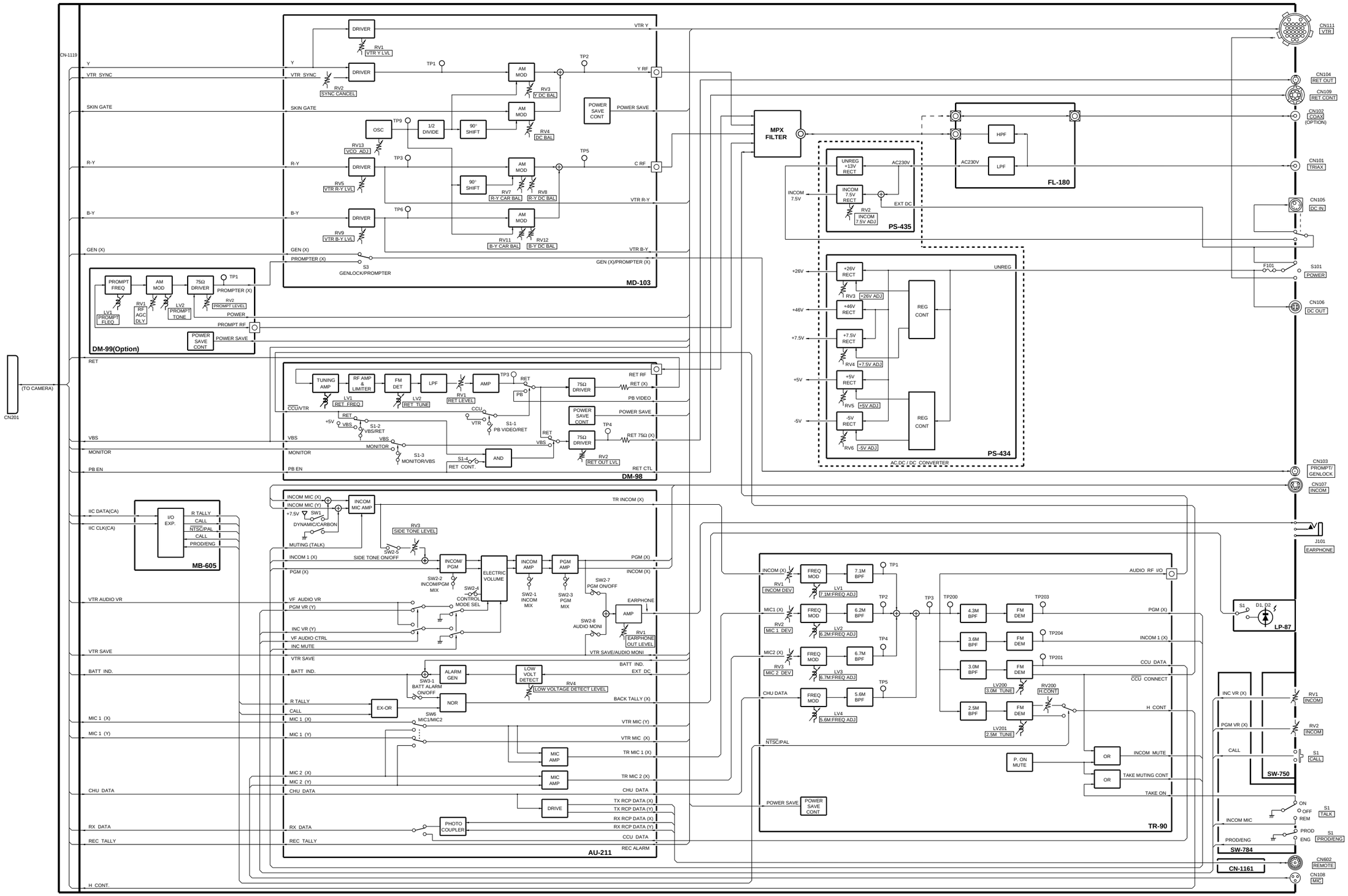




NOTE : * TEST (at X24164SIC7000)

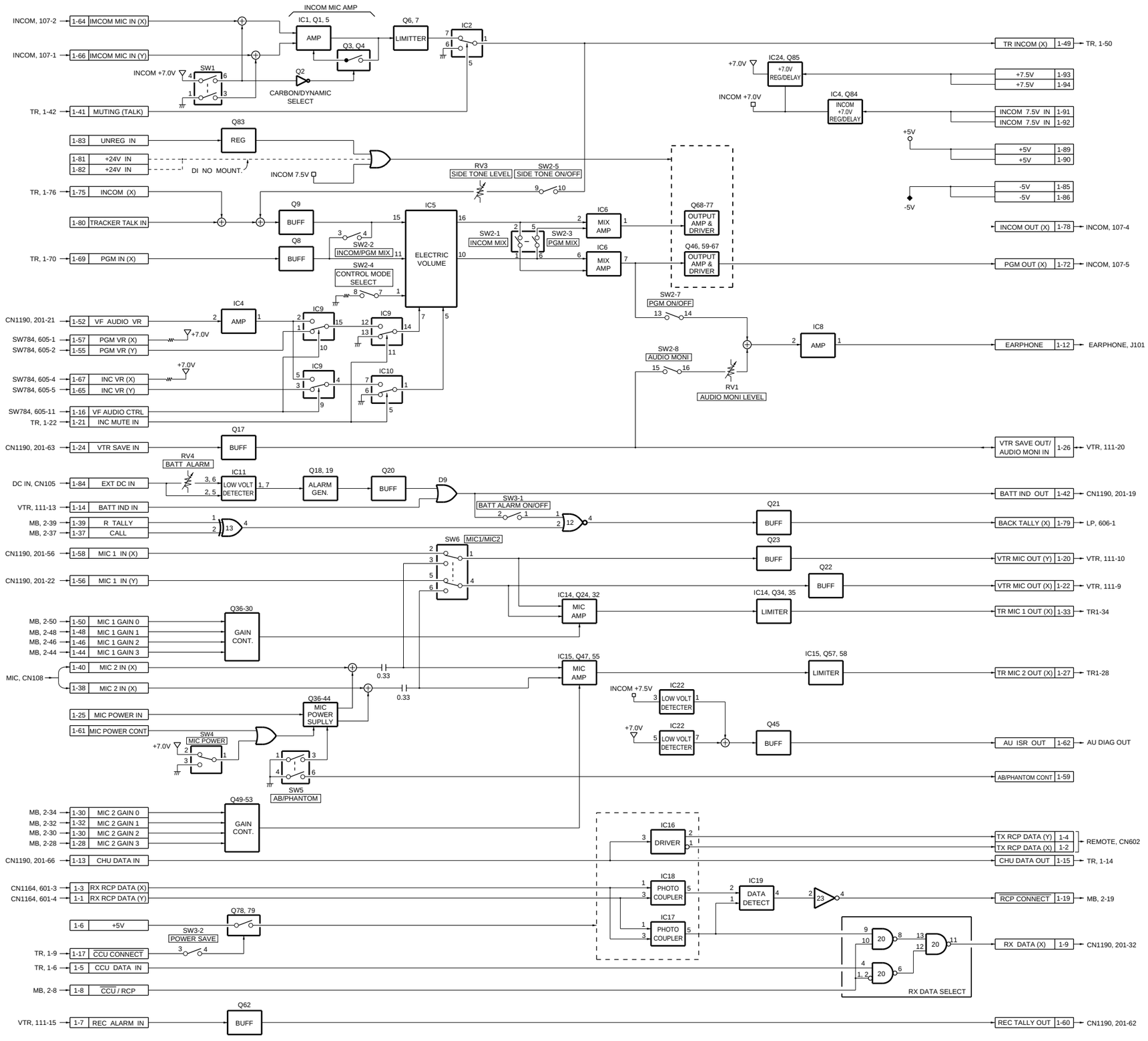
Section 6
Block Diagrams

OVERALL BLOCK



OVERALL BLOCK
CA-550
CA-550P

AU-211 BOARD



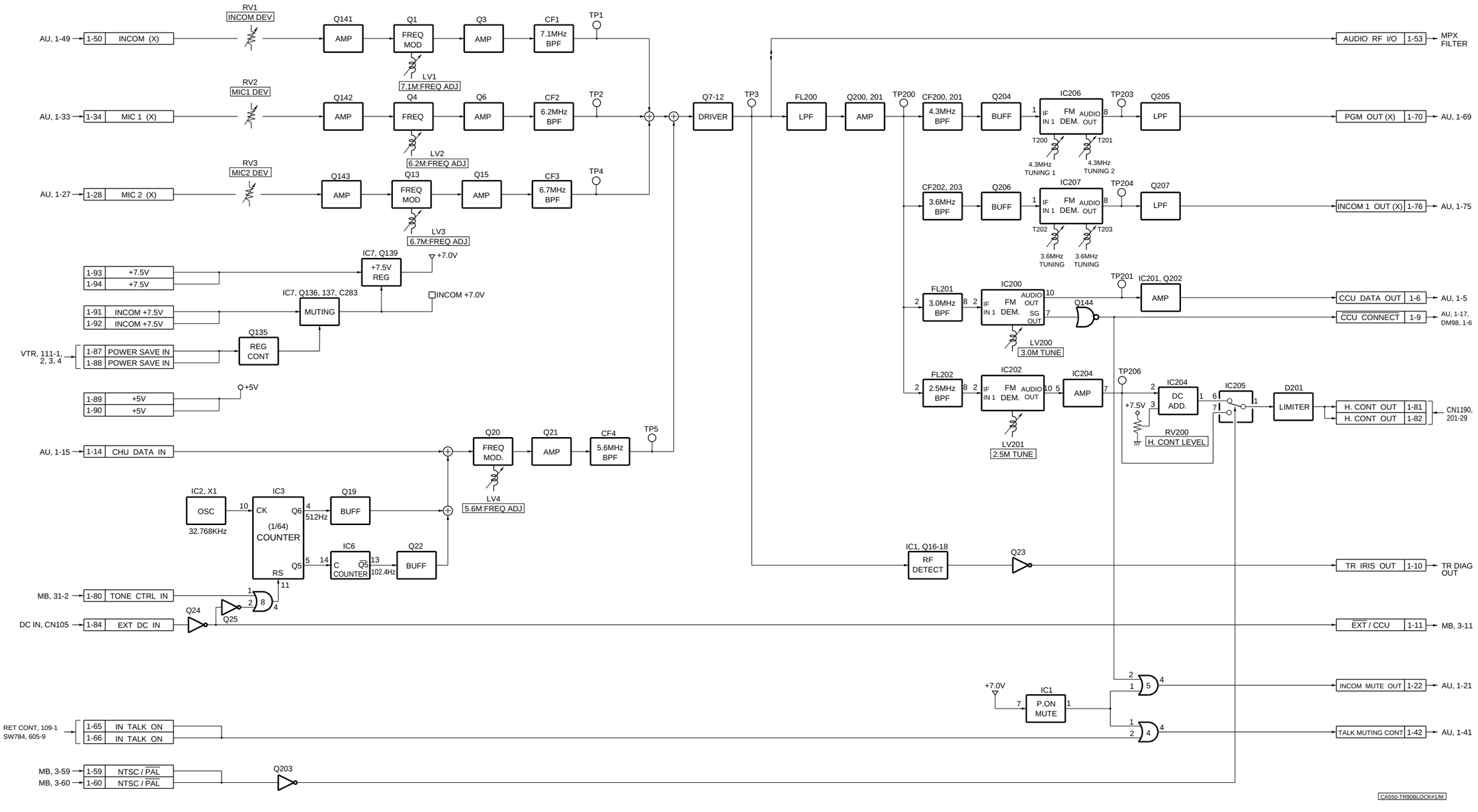
AU-211 BLOCK

CA-550
CA-550P

CA550-AU211BLOCK#1/M

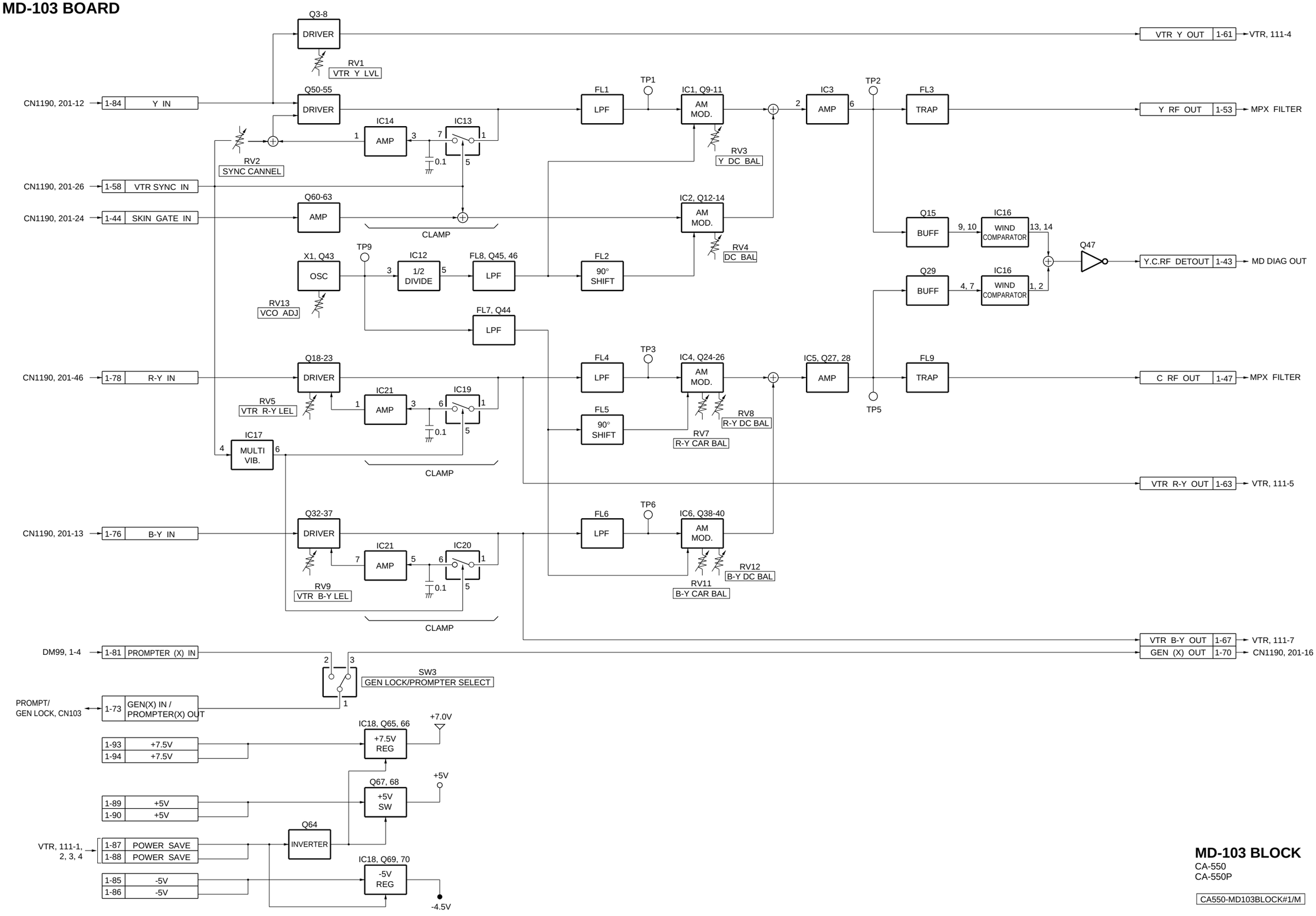
http://getMANUAL.com

TR-90 BOARD



TR-90 BLOCK
CA-550
CA-550P

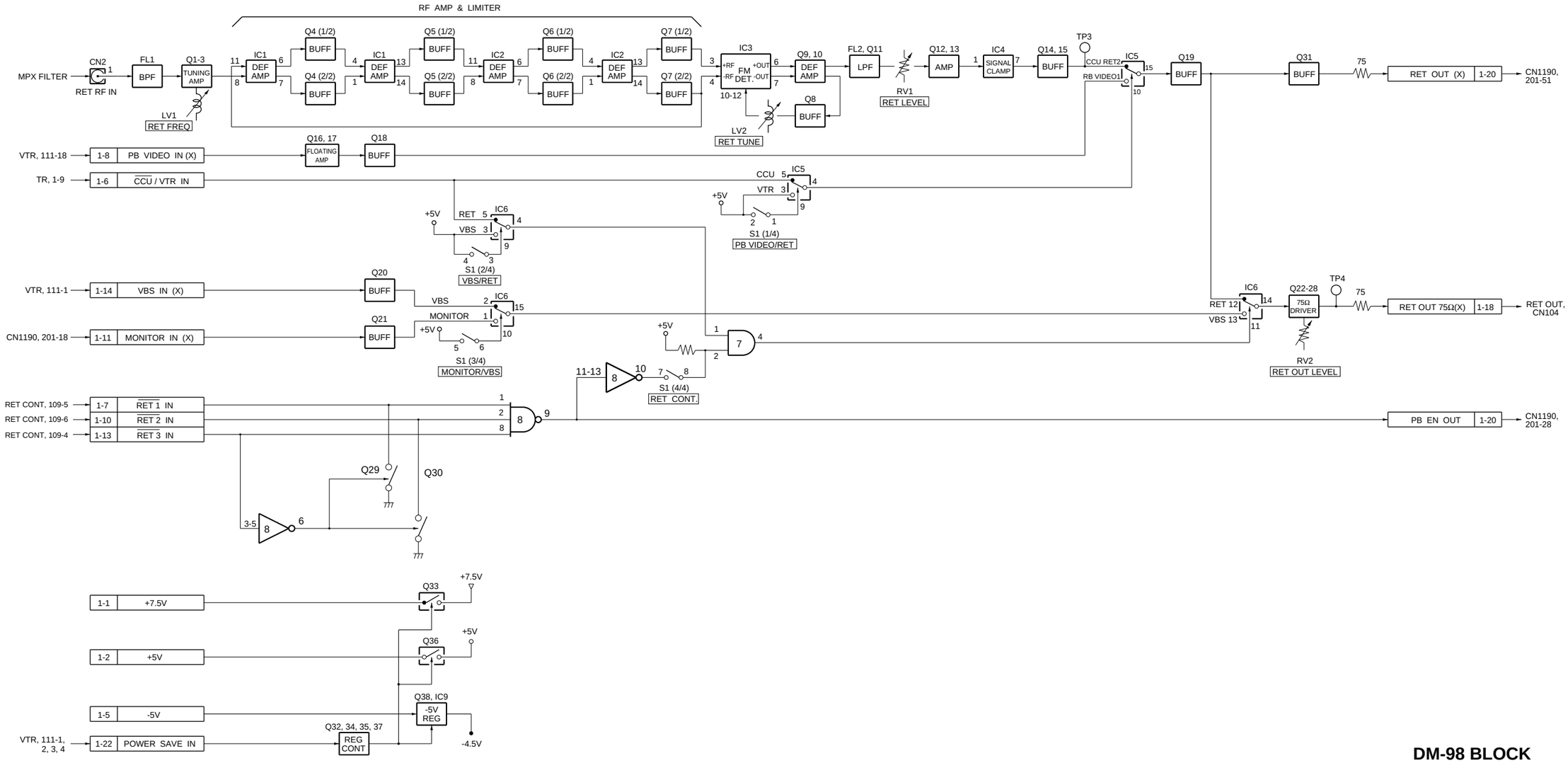
MD-103 BOARD



MD-103 BLOCK
CA-550
CA-550P

CA550-MD103BLOCK#1/M

DM-98 BOARD

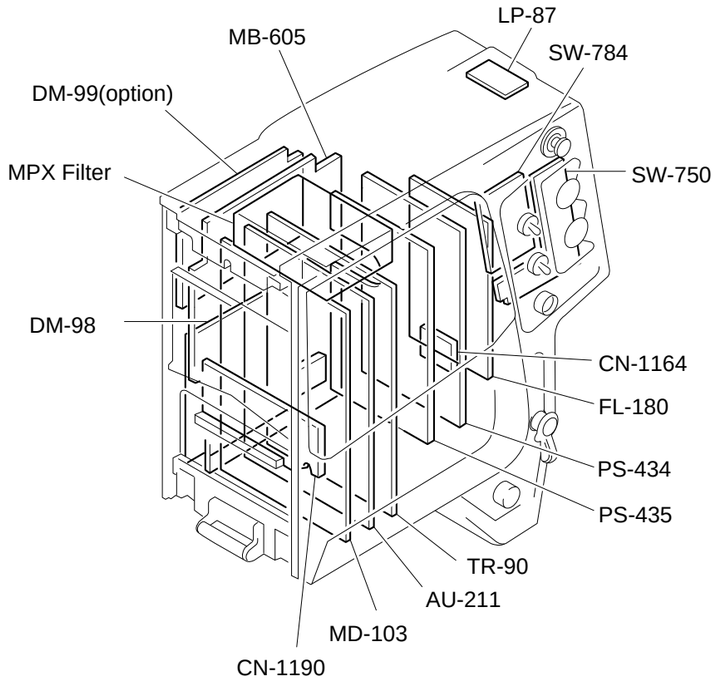


DM-98 BLOCK
CA-550
CA-550P

CA550-DM98BLOCK#1/M

Section 7
Schematic Diagrams

LOCATION OF PRINTED CIRCUIT BOARDS



AU-211 (1/2)

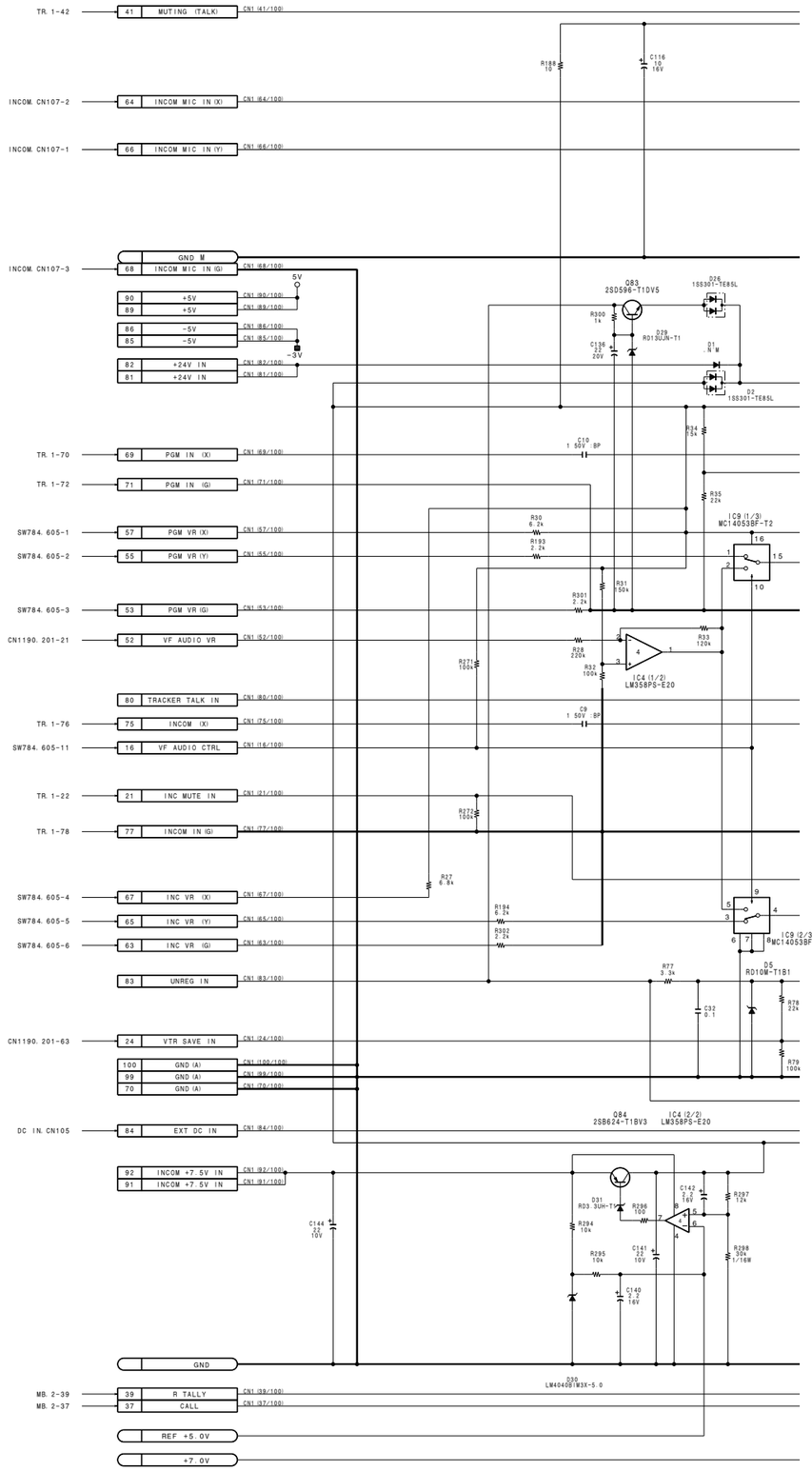
CA-550 (UC)
CA-550 (J)
CA-550P (CE)

AU-211 BOARD

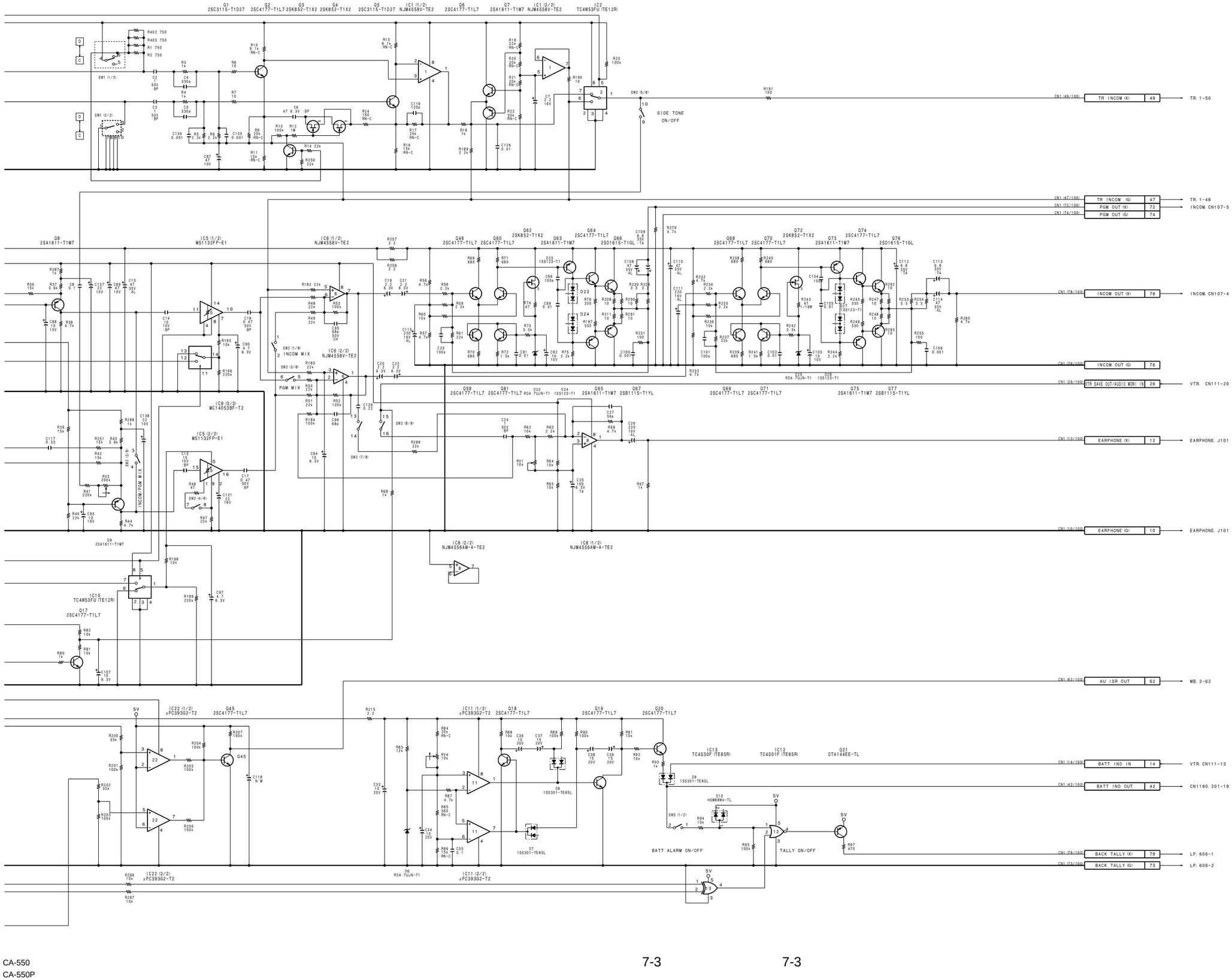
AU-211 (1-658-117-21)

*: B SIDE

	CN1	C-1		Q39	F-4
				Q40	F-3
	D2	B-2		Q41	F-4
*	D5	B-1		Q42	F-3
*	D6	D-4		Q43	F-3
*	D7	D-4	*	Q44	F-4
*	D8	D-4	*	Q45	D-4
*	D9	D-3	*	Q46	A-2
*	D10	D-4	*	Q47	F-3
*	D11	D-3	*	Q48	F-2
*	D12	D-3	*	Q49	G-2
	D17	G-3	*	Q50	F-2
	D18	F-3	*	Q51	F-2
*	D19	F-4	*	Q52	F-2
*	D20	F-3	*	Q53	F-3
*	D21	F-3	*	Q54	F-2
*	D22	A-1		Q55	F-3
	D23	A-3	*	Q56	F-2
	D24	A-3	*	Q57	G-3
	D25	A-3	*	Q58	G-3
	D26	B-2	*	Q59	A-2
	D27	A-4	*	Q60	A-2
	D28	B-4	*	Q61	A-2
*	D29	A-1	*	Q62	A-2
	D30	C-2	*	Q63	A-2
	D31	C-2	*	Q64	A-2
*	D32	F-4	*	Q65	A-2
			*	Q66	A-3
*	IC1	C-3	*	Q67	A-3
	IC2	C-3		Q68	A-3
*	IC4	C-2		Q69	A-3
*	IC5	B-2		Q70	A-4
*	IC6	B-4	*	Q71	A-4
*	IC8	B-4		Q72	B-4
*	IC9	B-3		Q73	A-4
	IC10	C-2	*	Q74	A-4
*	IC11	D-4	*	Q75	A-4
*	IC12	D-4	*	Q76	A-4
*	IC13	C-3	*	Q77	B-4
*	IC14	E-3	*	Q78	F-1
*	IC15	F-3	*	Q79	F-2
*	IC16	F-1		Q82	F-1
	IC17	F-1	*	Q83	B-1
	IC18	F-1	*	Q84	B-2
*	IC19	F-1	*	Q85	F-4
*	IC20	F-1			
	IC22	D-4		RV1	B-4
	IC23	F-1		(AUDIO MONI LEVEL)	
*	IC24	E-4		RV3	B-4
				(SIDE TONE LEVEL)	
*	L1	F-2		RV4	D-4
				(BATT ALARM)	
*	Q1	C-4			
*	Q2	C-4		SW1	B-4
*	Q3	C-3		(CARBON/DYNAMIC)	
*	Q4	C-3		SW2	B-3
*	Q5	C-4		(1: INCOM MIX)	
*	Q6	D-3		(2: INCOM PGM MIX)	
	Q7	D-3		(3: PGM MIX)	
	Q8	C-2		(4: CONTROL MODE SELECT)	
*	Q9	B-3		(5: SIDE TONE)	
*	Q17	B-1		(6: Not used)	
*	Q18	D-4		(7: PGM ON/OFF)	
*	Q19	D-4		(8: PB AUDIO)	
*	Q20	D-4		SW3	D-3
*	Q21	D-3		(1: BATT ALARM)	
*	Q22	E-4		(2: VTR SAVE)	
*	Q23	E-4		SW4	F-4
*	Q24	E-3		(MIC POWER)	
*	Q25	E-2		SW5	F-4
*	Q26	E-2		(AB PHANTOM)	
*	Q27	E-2		SW6	E-4
*	Q28	E-2		(MIC 1/MIC 2)	
*	Q29	E-2			
*	Q30	E-3			
*	Q31	E-2			
	Q32	E-3			
*	Q33	D-2			
*	Q34	E-3			
*	Q35	E-3			
	Q36	F-4			
	Q37	F-4			
	Q38	F-4			



7-2



AU-211 (1/2)

BOARD NO. 1-658-117-21
LOT NO. 508-
B-¥CA550-AU211-12

CA-550 (UC)
CA-550 (J)
CA-550P (CE)

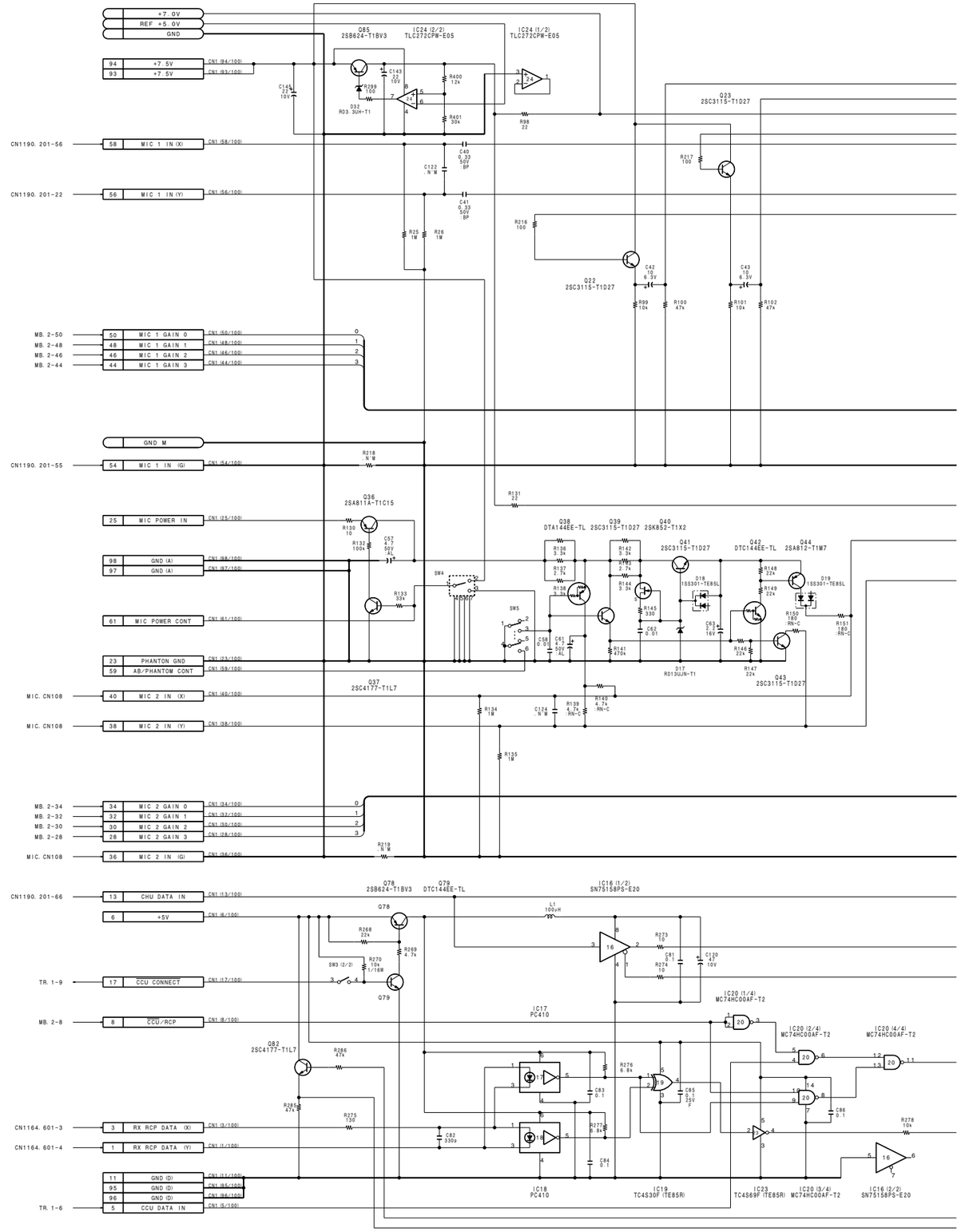
AU-211 (1-658-117-21)

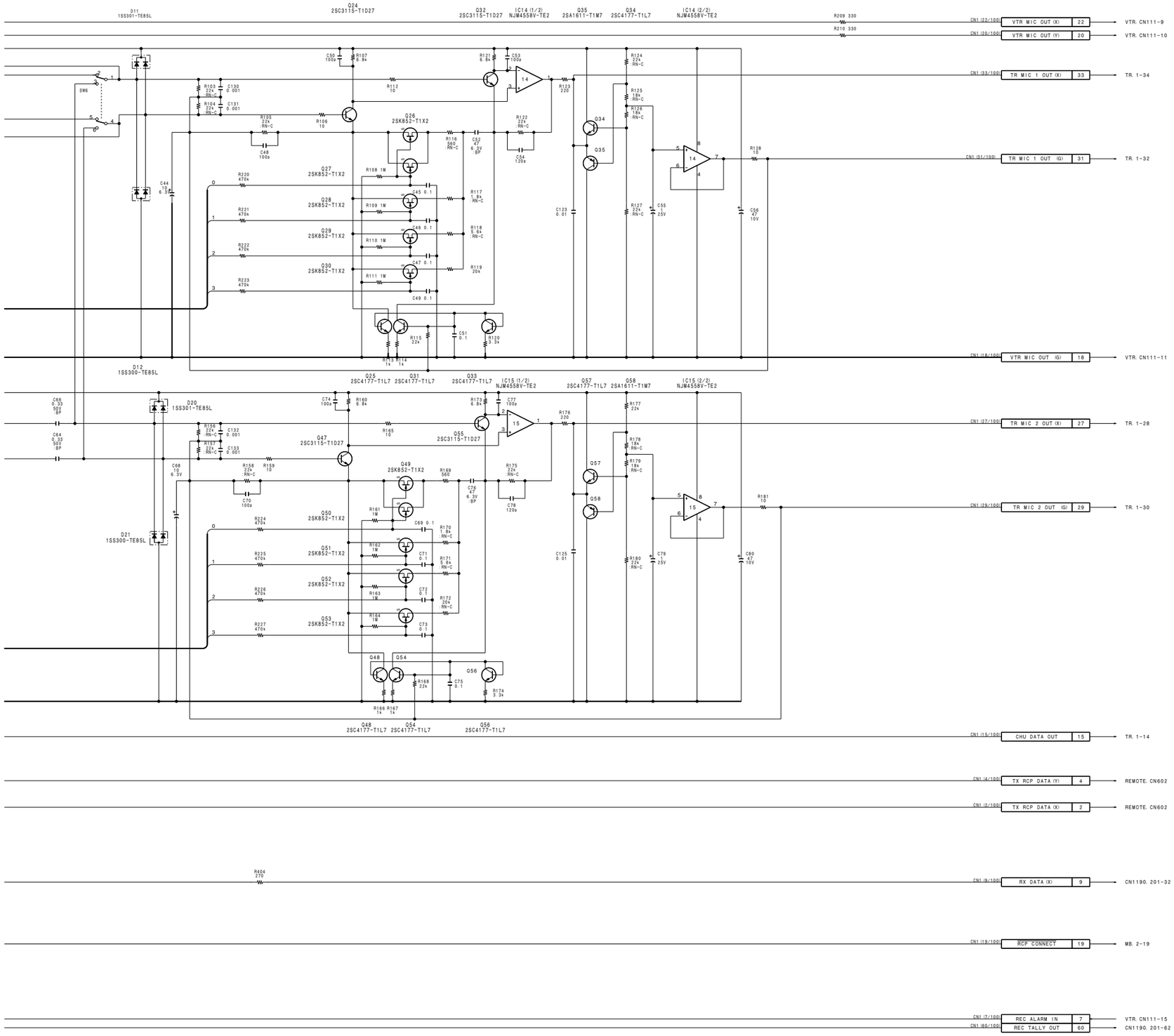
*: B SIDE

	CN1	C-1
	D2	B-2
*	D5	B-1
*	D6	D-4
*	D7	D-4
*	D8	D-4
*	D9	D-3
*	D10	D-4
*	D11	D-3
*	D12	D-3
	D17	G-3
	D18	F-3
*	D19	F-4
*	D20	F-3
*	D21	F-3
*	D22	A-1
	D23	A-3
	D24	A-3
	D25	A-3
	D26	B-2
	D27	A-4
	D28	B-4
*	D29	A-1
	D30	C-2
	D31	C-2
*	D32	F-4
*	IC1	C-3
	IC2	C-3
*	IC4	C-2
*	IC5	B-2
*	IC6	B-4
*	IC8	B-4
*	IC9	B-3
	IC10	C-2
*	IC11	D-4
*	IC12	D-4
*	IC13	C-3
*	IC14	E-3
*	IC15	F-3
*	IC16	F-1
	IC17	F-1
	IC18	F-1
*	IC19	F-1
*	IC20	F-1
	IC22	D-4
	IC23	F-1
*	IC24	E-4
*	L1	F-2
*	Q1	C-4
*	Q2	C-4
*	Q3	C-3
*	Q4	C-3
*	Q5	C-4
*	Q6	D-3
	Q7	D-3
	Q8	C-2
*	Q9	B-3
*	Q17	B-1
*	Q18	D-4
*	Q19	D-4
*	Q20	D-4
*	Q21	D-3
*	Q22	E-4
*	Q23	E-4
*	Q24	E-3
*	Q25	E-2
*	Q26	E-2
*	Q27	E-2
*	Q28	E-2
*	Q29	E-2
*	Q30	E-3
*	Q31	E-2
	Q32	E-3
*	Q33	D-2
*	Q34	E-3
*	Q35	E-3
	Q36	F-4
	Q37	F-4
	Q38	F-4
	Q39	F-4
	Q40	F-3
	Q41	F-4
	Q42	F-3
	Q43	F-3
*	Q44	F-4
*	Q45	D-4
*	Q46	A-2
*	Q47	F-3
*	Q48	F-2
*	Q49	G-2
*	Q50	F-2
*	Q51	F-2
*	Q52	F-2
*	Q53	F-3
*	Q54	F-2
	Q55	F-3
*	Q56	F-2
*	Q57	G-3
*	Q58	G-3
*	Q59	A-2
*	Q60	A-2
*	Q61	A-2
*	Q62	A-2
*	Q63	A-2
*	Q64	A-2
*	Q65	A-2
*	Q66	A-3
*	Q67	A-3
	Q68	A-3
	Q69	A-3
	Q70	A-4
*	Q71	A-4
	Q72	B-4
	Q73	A-4
*	Q74	A-4
*	Q75	A-4
*	Q76	A-4
*	Q77	B-4
*	Q78	F-1
*	Q79	F-2
	Q82	F-1
*	Q83	B-1
*	Q84	B-2
*	Q85	F-4

RV1 B-4
(AUDIO MONI LEVEL)
RV3 B-4
(SIDE TONE LEVEL)
RV4 D-4
(BATT ALARM)

SW1 B-4
(CARBON/DYNAMIC)
SW2 B-3
(1: INCOM MIX)
(2: INCOM PGM MIX)
(3: PGM MIX)
(4: CONTROL MODE SELECT)
(5: SIDE TONE)
(6: Not used)
(7: PGM ON/OFF)
(8: PB AUDIO)
SW3 D-3
(1: BATT ALARM)
(2: VTR SAVE)
SW4 F-4
(MIC POWER)
SW5 F-4
(AB PHANTOM)
SW6 E-4
(MIC 1/MIC 2)




CN1 (22/100) VTR MIC OUT (X) 22 → VTR. CN111-9
CN1 (20/100) VTR MIC OUT (Y) 20 → VTR. CN111-10
CN1 (33/100) TR MIC 1 OUT (X) 33 → TR. 1-34
CN1 (31/100) TR MIC 1 OUT (G) 31 → TR. 1-32
CN1 (18/100) VTR MIC OUT (G) 18 → VTR. CN111-11
CN1 (27/100) TR MIC 2 OUT (X) 27 → TR. 1-28
CN1 (29/100) TR MIC 2 OUT (G) 29 → TR. 1-30
CN1 (15/100) CHU DATA OUT 15 → TR. 1-14
CN1 (4/100) TX RCP DATA (Y) 4 → REMOTE. CN602
CN1 (2/100) TX RCP DATA (X) 2 → REMOTE. CN602
CN1 (9/100) RX DATA (X) 9 → CN1190. 201-32
CN1 (19/100) RCP CONNECT 19 → MB. 2-19
CN1 (7/100) REC ALARM IN 7 → VTR. CN111-15
CN1 (60/100) REC TALLY OUT 60 → CN1190. 201-62

AU-211 (2/2)

BOARD NO. 1-658-117-21
LOT NO. 508-
B-¥CA550-AU211-12

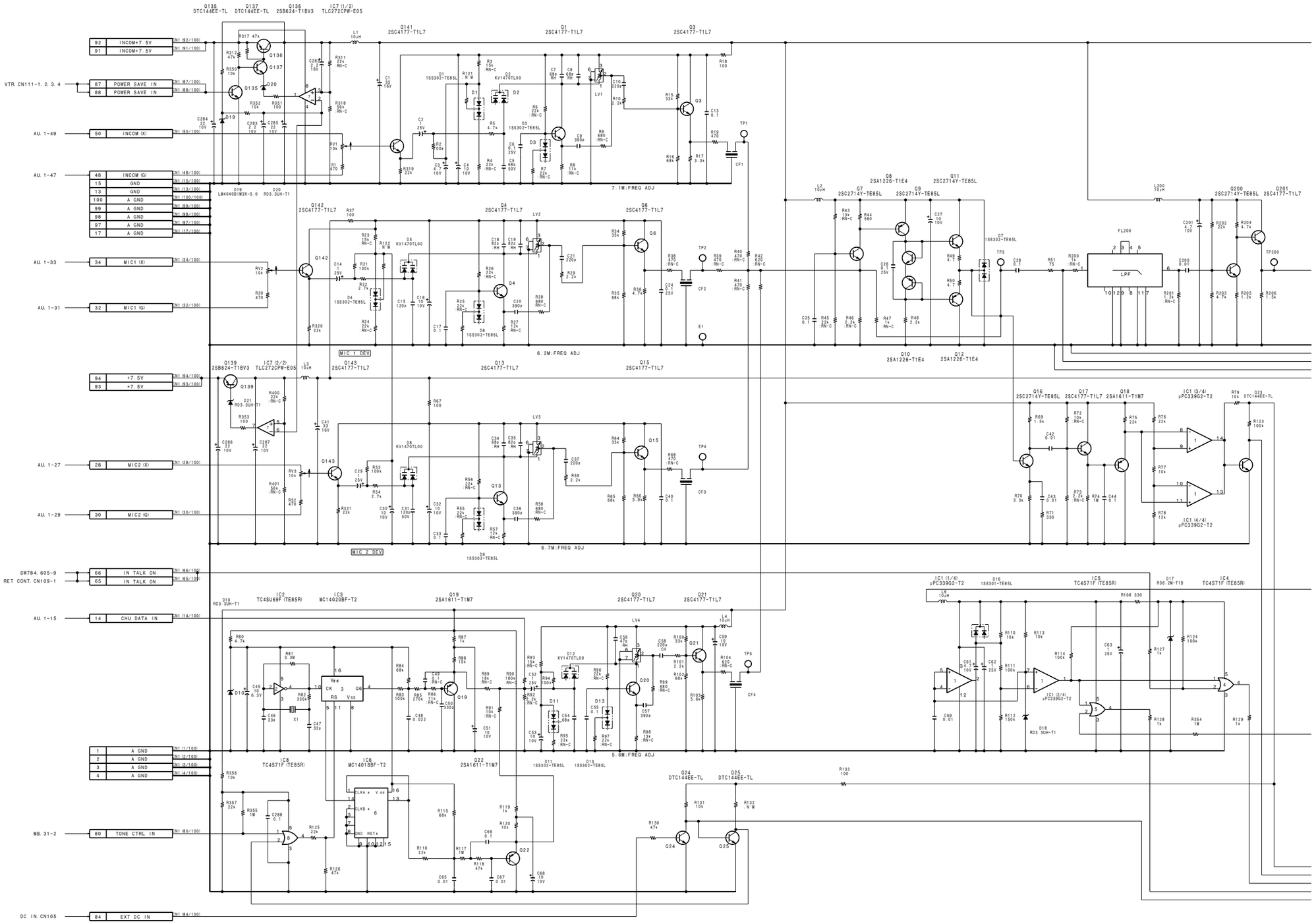
CA-550 (UC)
CA-550 (J)
CA-550P (CE)

TR-90 BOARD

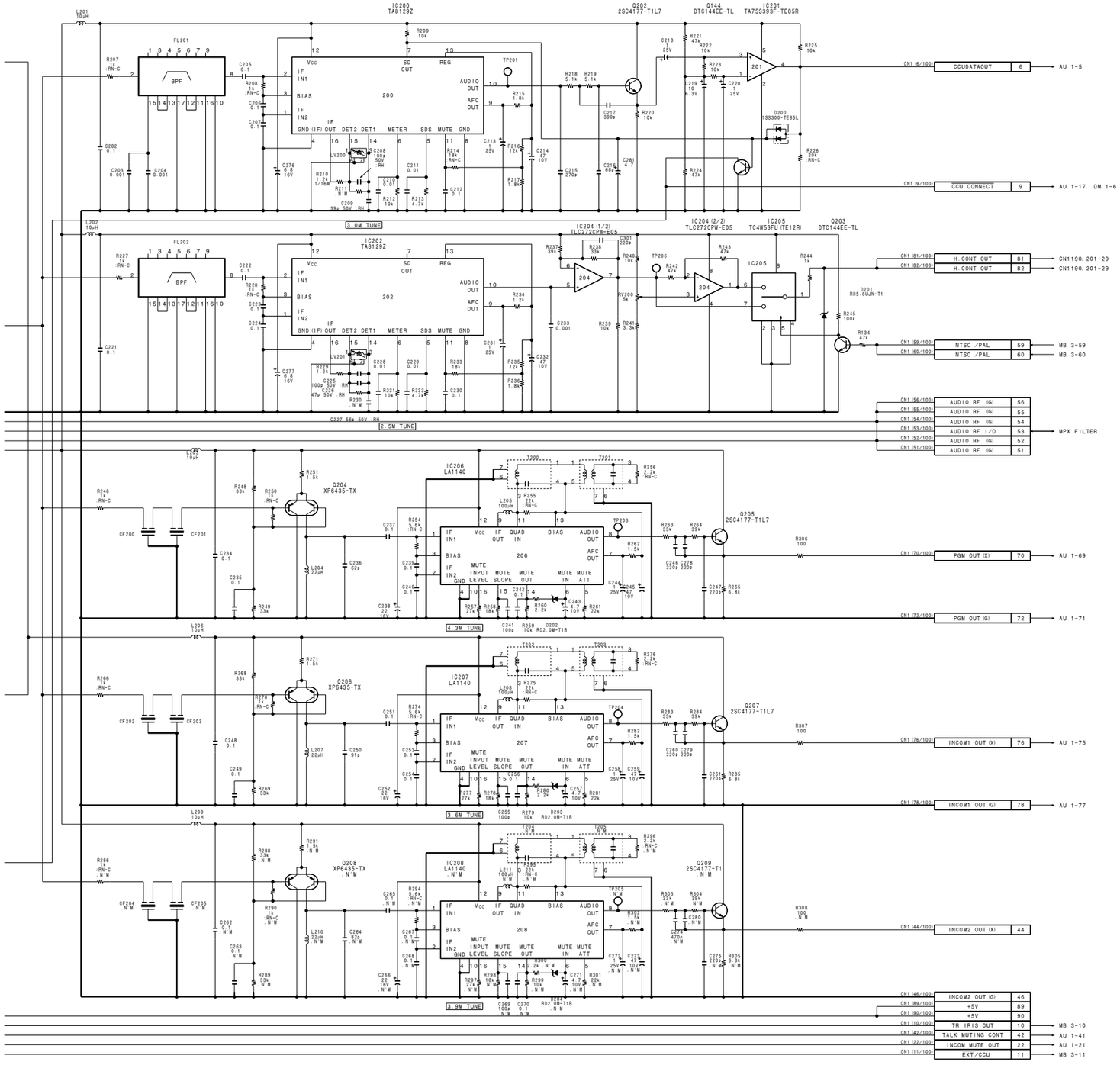
TR-90 (1-658-118-21)

*: B SIDE

CF1	D-2	* Q9	D-1
CF2	E-2	* Q10	D-1
CF3	F-2	* Q11	D-1
CF4	G-2	* Q12	D-1
CF200	B-4	* Q13	F-3
CF201	B-4	* Q15	F-2
CF202	A-4	Q16	E-1
CF203	A-4	Q17	F-1
		Q18	F-1
CN1	C-1	* Q19	G-3
		* Q20	F-2
* D1	D-4	* Q21	F-2
D2	E-3	* Q22	G-3
* D3	E-3	* Q23	F-1
* D4	E-4	* Q24	B-1
D5	E-3	* Q25	B-1
* D6	E-3	* Q135	A-2
D7	D-2	* Q136	A-1
D8	F-3	* Q137	A-1
* D9	F-3	* Q139	A-1
D10	F-3	* Q141	E-4
* D11	G-3	Q142	E-4
* D12	F-2	* Q143	F-4
* D13	F-2	Q144	E-2
* D16	F-1	* Q200	D-2
* D17	G-1	* Q201	D-2
* D18	F-1	* Q202	D-2
* D19	A-1	* Q203	B-1
* D20	A-1	Q204	B-4
* D21	A-1	* Q205	B-3
* D200	D-2	Q206	A-4
D201	B-1	* Q207	A-3
* D202	B-3		
* D203	A-3	RV1	D-4
		RV2	E-4
E1	E-2	RV3	F-4
		RV200	C-2
FL200	D-1		
FL201	D-4	TP1	E-2
FL202	B-4	TP2	E-2
		TP3	D-1
IC1	F-1	TP4	F-2
* IC2	F-3	TP5	F-2
IC3	F-3	TP200	D-2
IC4	G-1	TP201	D-4
* IC5	F-1	TP203	B-3
IC6	F-4	TP204	A-3
* IC7	A-1	TP206	B-1
IC8	E-1		
IC200	D-4	T200	B-2
* IC201	D-2	T201	B-2
IC202	B-3	T202	A-2
IC204	B-1	T203	A-2
IC205	B-1		
IC206	B-4	X1	F-3
IC207	A-4		
LV1	E-3		
LV2	E-3		
LV3	F-3		
LV4	F-2		
LV200	D-3		
LV201	B-2		
L1	A-1		
L2	D-2		
* L3	B-1		
L4	F-2		
L6	F-2		
L200	D-2		
L201	D-2		
L202	C-1		
* L203	B-1		
L204	B-3		
L205	B-3		
L206	A-1		
L207	A-3		
L208	A-3		
L209	C-1		
* Q1	E-3		
* Q3	E-2		
* Q4	E-3		
* Q6	E-2		
* Q7	D-1		
* Q8	D-1		



http://getMANUAL.com



TR-90

BOARD NO. 1-658-118-21
LOT NO. 508-

B-¥CA550-TR90-12

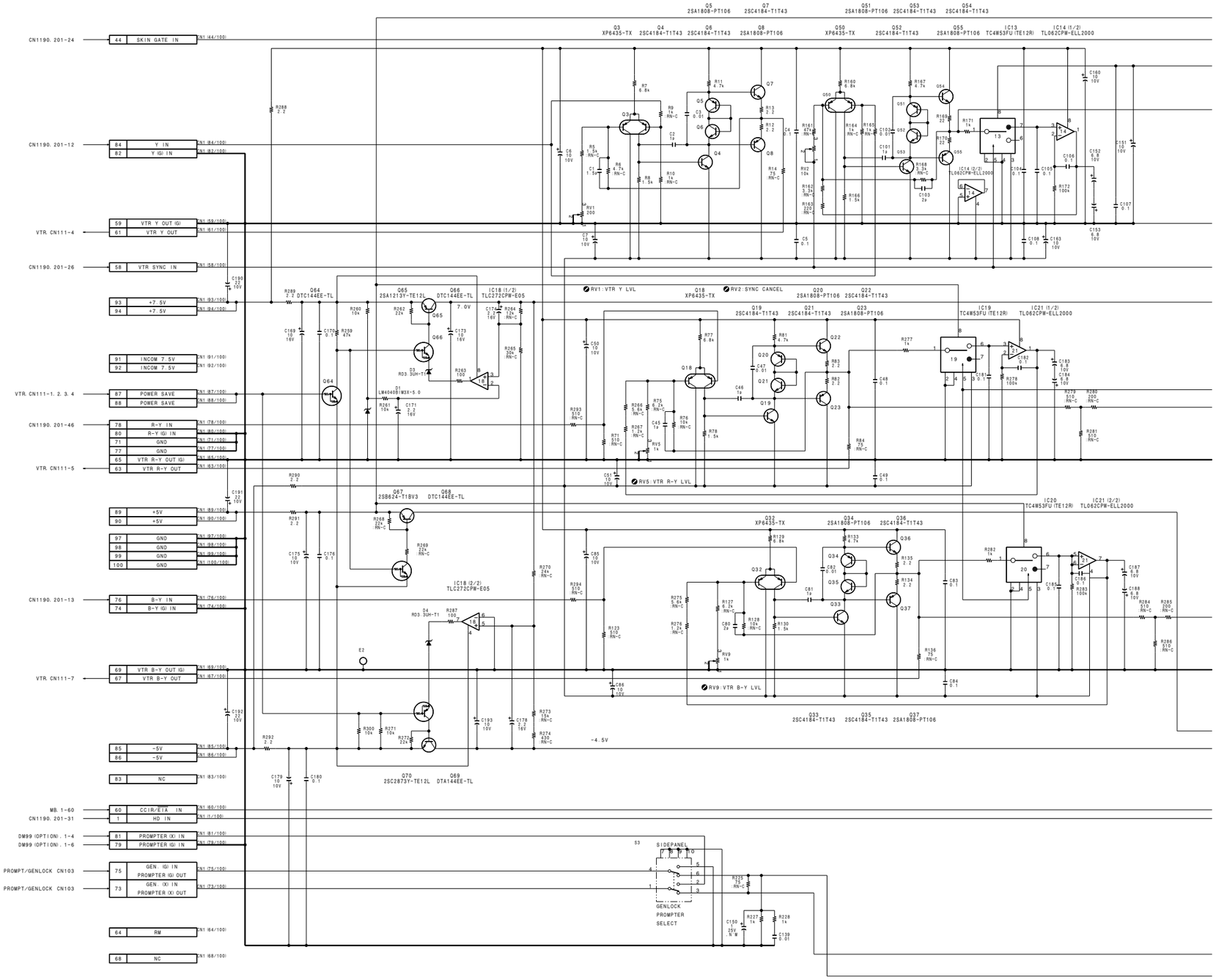
CA-550 (UC)
CA-550 (J)
CA-550P (CE)

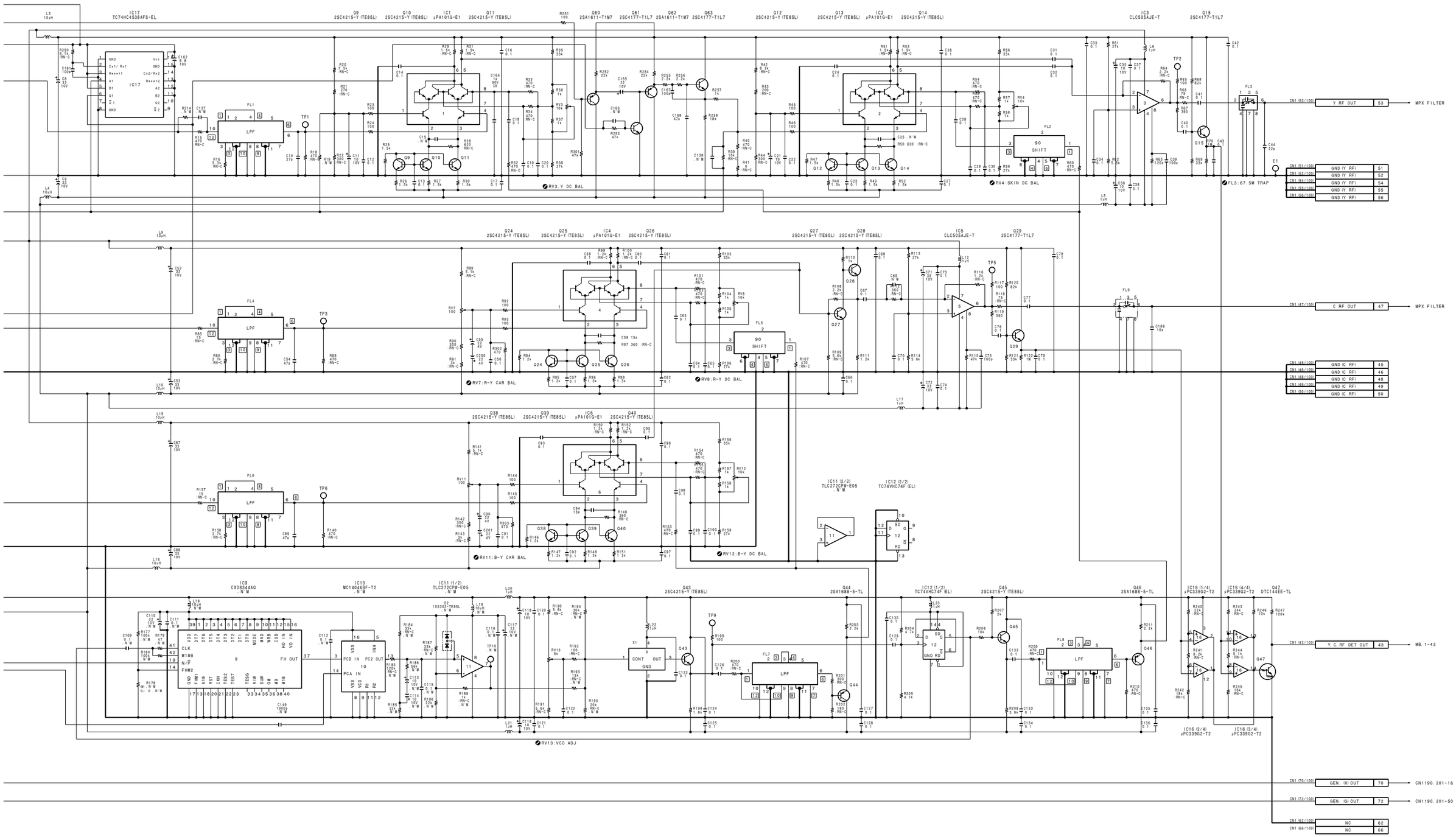
MD-103 BOARD

MD-103 (1-658-119-21)

*: B SIDE

	CN1	C-1	*	Q44	F-1
			*	Q45	G-2
*	D1	B-1	*	Q46	F-1
	D3	B-2		Q47	F-1
*	D4	B-1	*	Q50	A-1
			*	Q51	A-1
	E1	C-1	*	Q52	A-1
	E2	A-4	*	Q53	A-2
			*	Q54	A-2
	FL1	C-3	*	Q55	A-2
	FL2	C-2	*	Q60	C-3
	FL3	C-1	*	Q61	C-3
	FL4	D-3	*	Q62	C-3
	FL5	D-2	*	Q63	D-4
	FL6	E-3	*	Q64	B-1
	FL7	F-2	*	Q65	B-2
	FL8	F-2		Q66	B-1
	FL9	C-2	*	Q67	C-1
			*	Q68	C-1
	IC1	C-3	*	Q69	B-1
	IC2	C-3	*	Q70	B-1
	IC3	C-2			
	IC4	D-2		RV1	A-3
	IC5	D-1		RV2	A-3
	IC6	E-2		RV3	B-2
	IC12	F-2		RV4	C-3
	IC13	A-2		RV5	A-4
	IC14	A-2		RV7	D-3
	IC16	F-1		RV8	D-4
	IC17	B-3		RV9	A-4
*	IC18	B-1		RV11	E-3
*	IC19	B-4		RV12	D-3
*	IC20	C-4		RV13	F-3
*	IC21	B-4			
				S3	B-4
	L3	B-3			
	L4	C-4		TP1	C-3
	L5	B-2		TP2	C-2
	L6	B-2		TP3	E-3
	L9	D-4		TP5	C-1
	L10	E-3		TP6	E-2
	L11	E-1		TP9	F-1
*	L12	C-1			
	L15	E-4		X1	F-2
	L16	E-4			
	L20	F-3			
	L21	E-2			
	L22	E-3			
	L23	F-3			
*	Q3	A-2			
*	Q4	A-2			
*	Q5	A-2			
*	Q6	A-2			
*	Q7	A-2			
*	Q8	A-2			
*	Q9	C-3			
*	Q10	C-3			
*	Q11	C-3			
*	Q12	C-3			
*	Q13	C-3			
*	Q14	C-3			
*	Q15	C-1			
*	Q18	A-4			
*	Q19	A-3			
*	Q20	A-3			
*	Q21	A-3			
*	Q22	A-3			
*	Q23	A-3			
*	Q24	D-3			
*	Q25	D-3			
*	Q26	D-2			
*	Q27	E-1			
*	Q28	D-1			
*	Q29	D-1			
*	Q32	A-4			
*	Q33	A-3			
*	Q34	A-3			
*	Q35	A-3			
*	Q36	A-3			
*	Q37	A-3			
*	Q38	E-3			
*	Q39	E-3			
*	Q40	E-2			
*	Q43	F-2			





MD-103

BOARD NO. 1-658-119-21
LOT NO. 508-
B-¥CA550-MD103-12

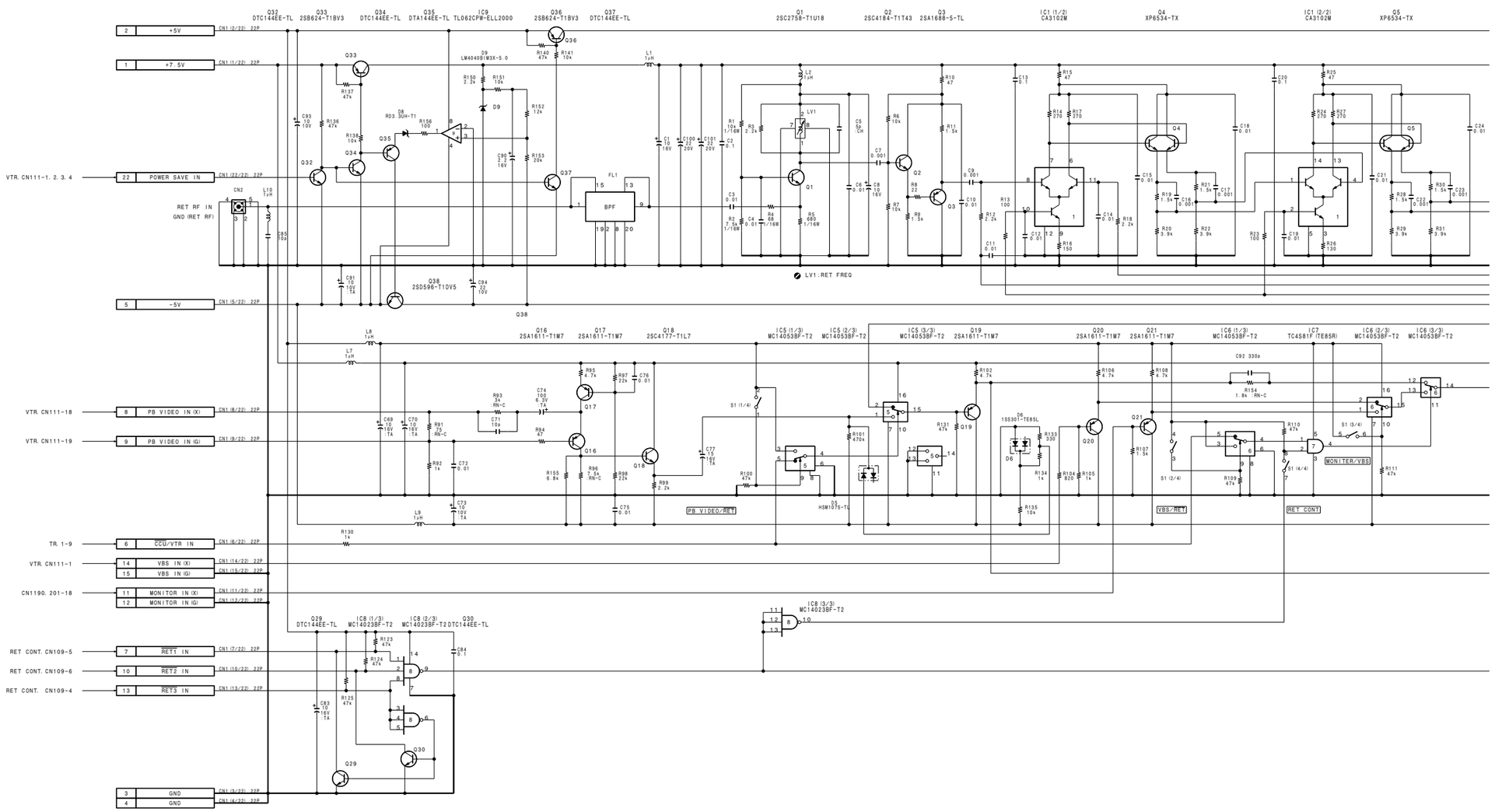
CA-550 (UC)
CA-550 (J)
CA-550P (CE)

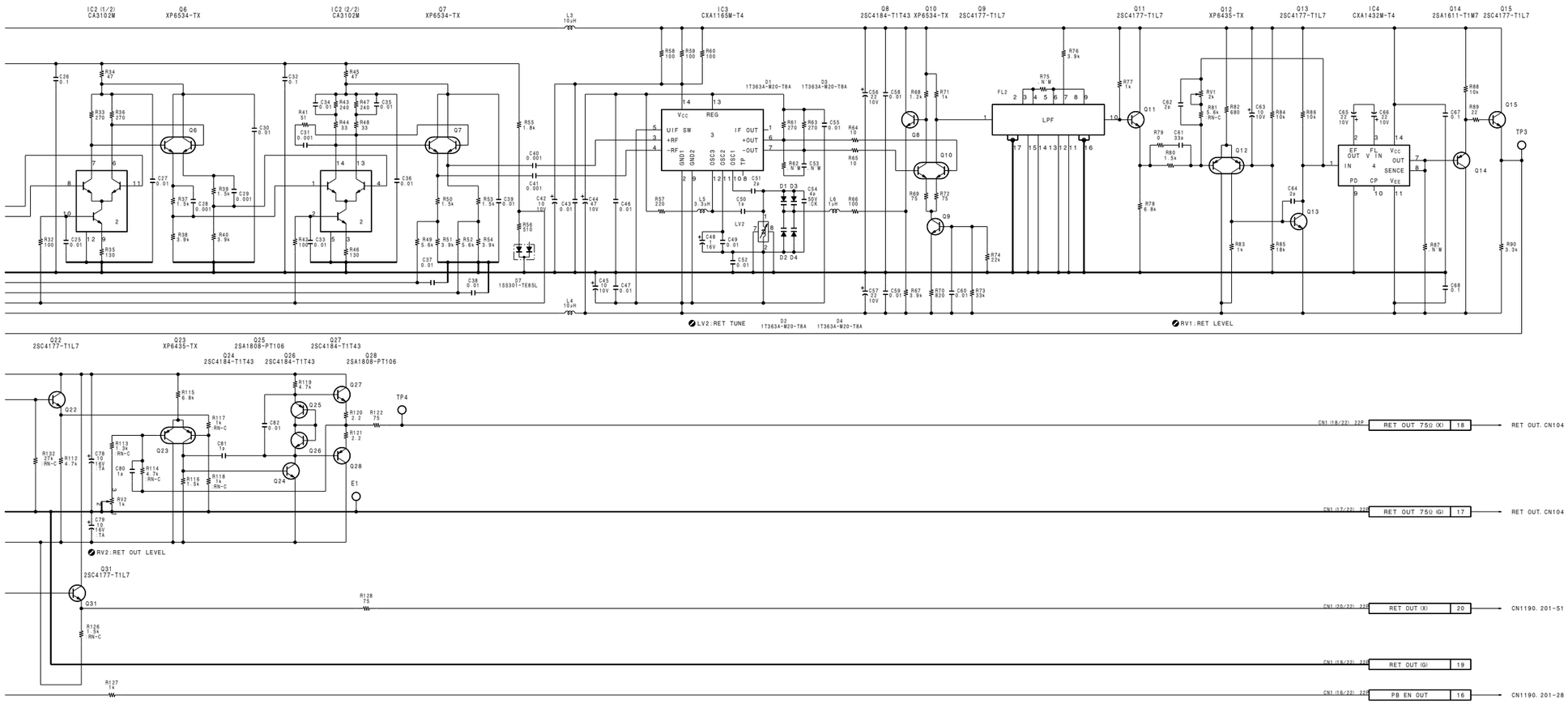
DM-98 BOARD

DM-98 (1-658-120-21)

*: B SIDE

*	CN1	F-5
	CN2	E-1
*	D1	B-6
*	D2	C-6
*	D3	B-6
*	D4	C-6
*	D5	E-3
*	D6	E-4
*	D7	C-4
	D8	F-6
	D9	E-6
	E1	A-1
	FL1	D-1
	FL2	E-6
	IC1	B-2
	IC2	B-3
	IC3	B-5
	IC4	E-5
*	IC5	D-4
*	IC6	D-2
	IC7	D-2
	IC8	D-3
	IC9	F-5
	LV1	B-1
	LV2	C-6
	L1	B-4
	L2	B-2
	L3	D-6
	L4	C-5
	L5	B-6
	L6	C-6
	L7	F-4
	L8	F-3
	L9	E-4
	L10	E-1
	Q1	C-1
	Q2	C-2
	Q3	C-2
	Q4	B-2
	Q5	C-3
	Q6	B-3
	Q7	C-4
*	Q8	C-6
*	Q9	C-5
*	Q10	C-5
*	Q11	E-6
*	Q12	D-6
*	Q13	D-6
*	Q14	D-5
*	Q15	E-5
*	Q16	F-3
*	Q17	F-3
*	Q18	F-3
*	Q19	E-2
*	Q20	E-2
*	Q21	E-2
*	Q22	F-2
*	Q23	F-2
*	Q24	E-2
*	Q25	F-1
*	Q26	F-2
*	Q27	E-1
*	Q28	E-2
	Q29	D-4
	Q30	D-4
*	Q31	E-2
	Q32	F-6
	Q33	F-6
	Q34	F-6
	Q35	F-6
*	Q36	F-6
*	Q37	E-6
	Q38	F-4
	RV1	D-5
	RV2	F-2
	S1	D-2
	TP3	D-5
	TP4	F-1





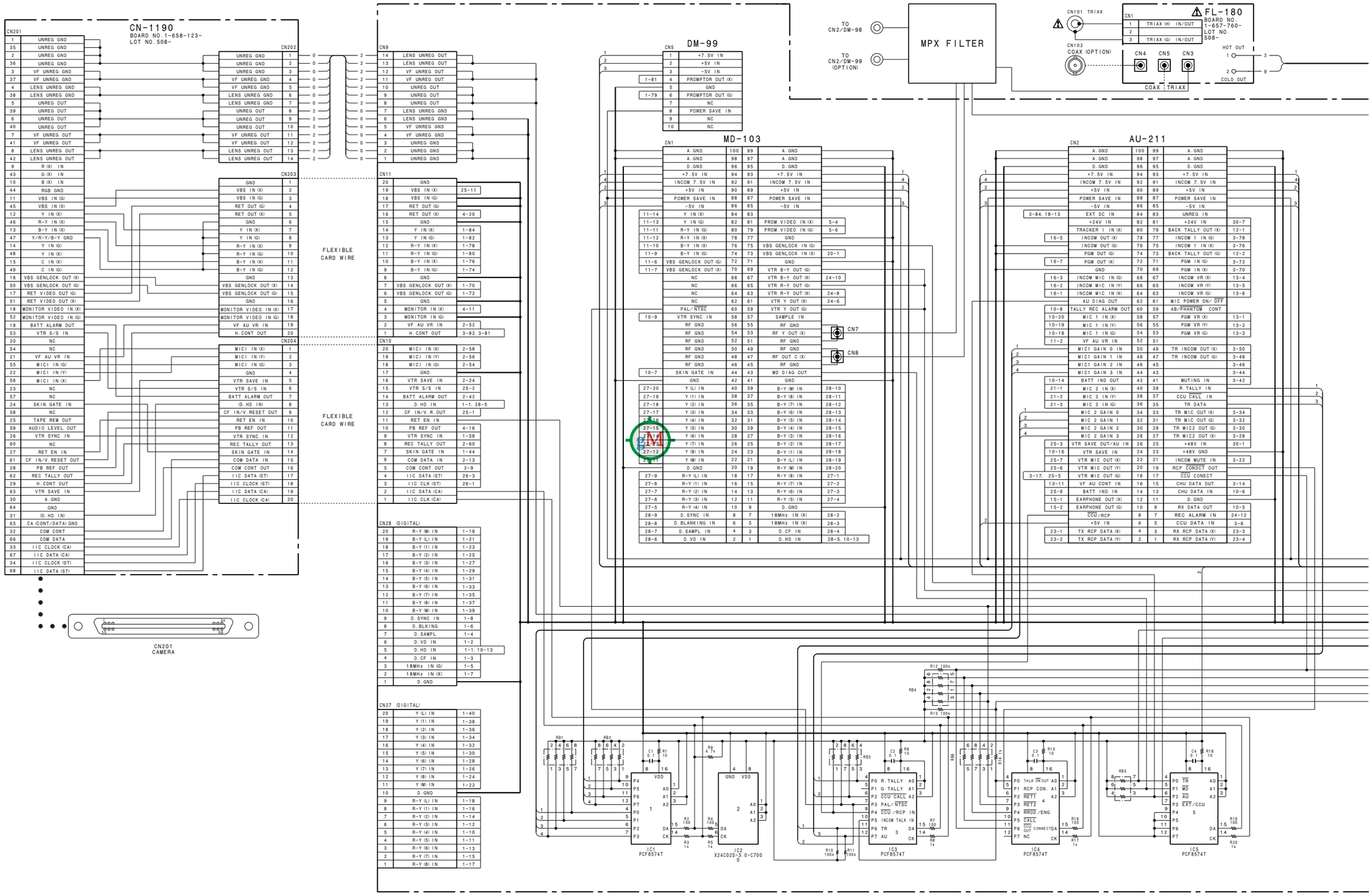
DM-98

BOARD NO. 1-658-120-21
LOT NO. 508-
B-¥CA550-DM98-12

FRAME WIRING MB-605 FL-180 LP-87 SW-750/784 CN-1164/1190

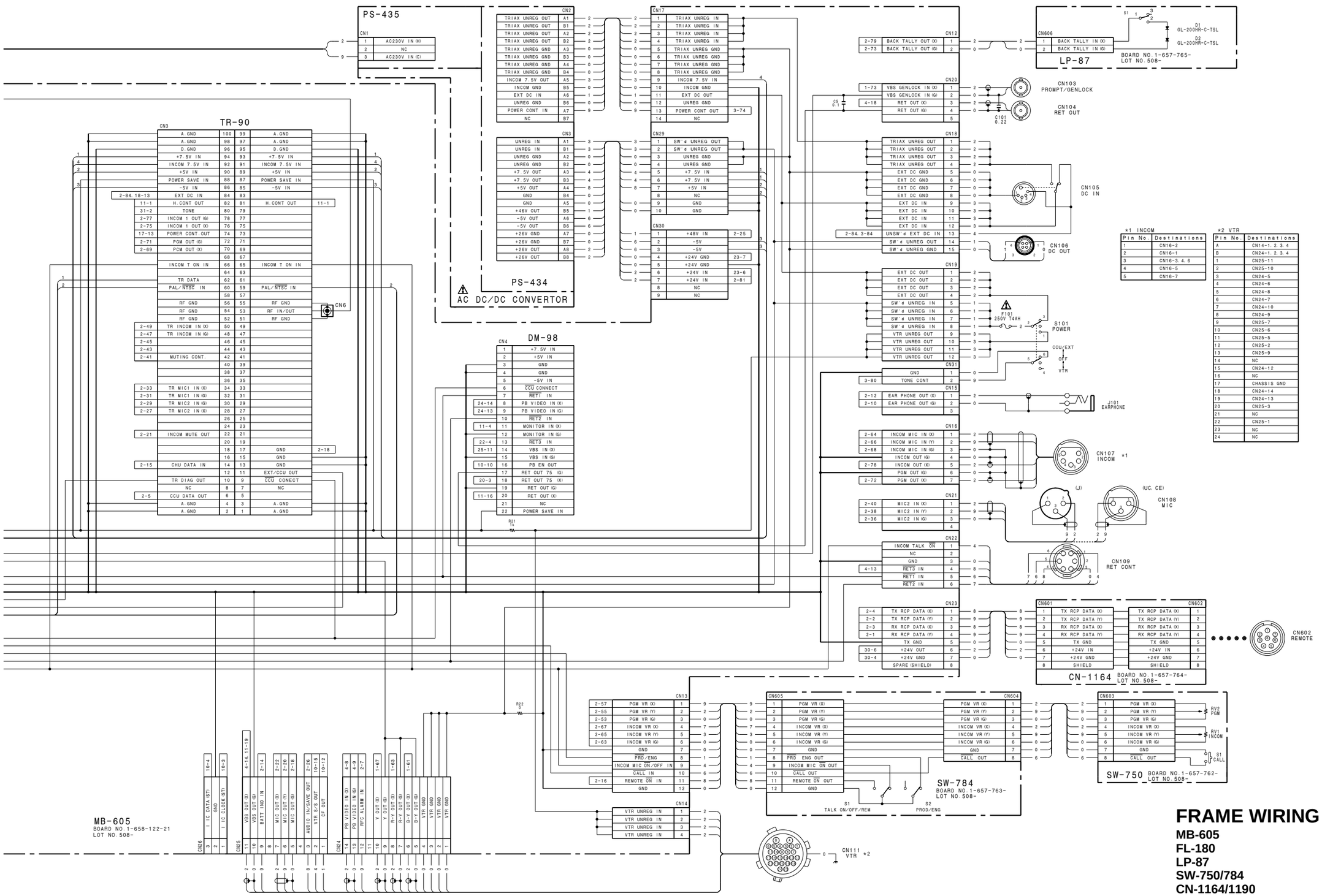
CA-550 (UC)
CA-550 (J)
CA-550P (CE)

FRAME WIRING



7-12

FRAME WIRING MB-605 FL-180 LP-87 SW-750/784 CN-1164/1190

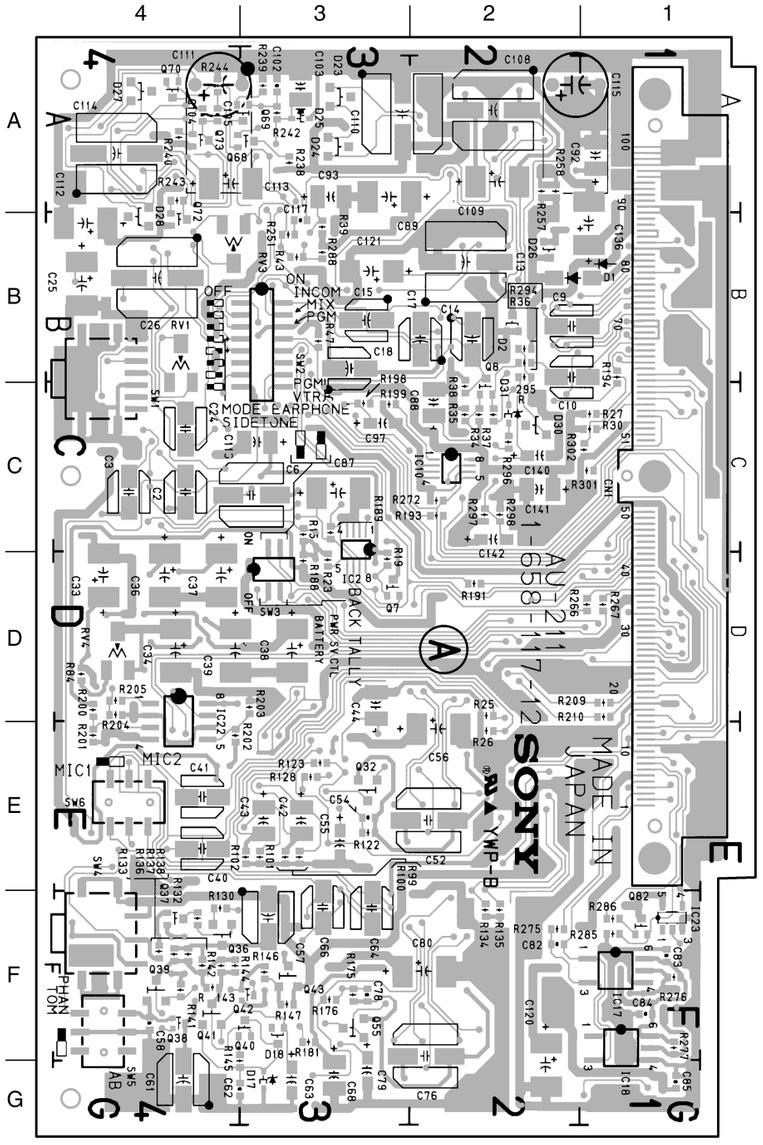


FRAME WIRING
MB-605
FL-180
LP-87
SW-750/784
CN-1164/1190

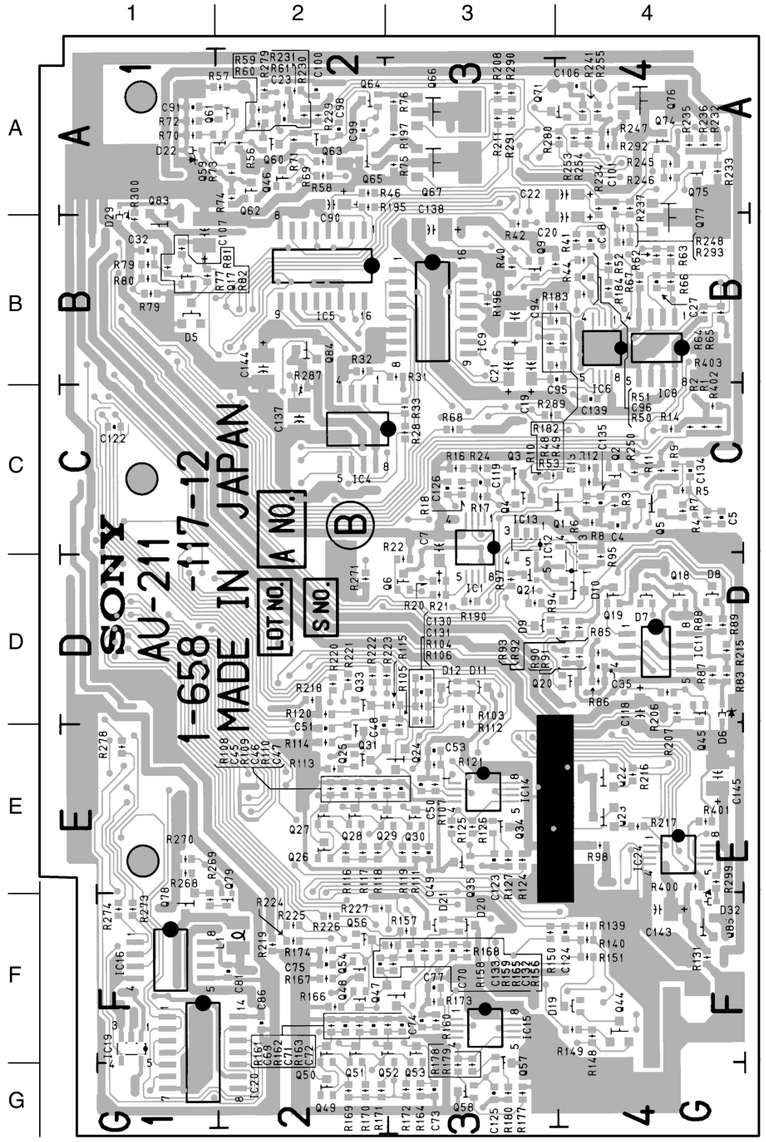
Section 8
Board Layouts

CA-550 (UC)
CA-550 (J)
CA-550P (CE)

AU-211 BOARD



AU-211 - A SIDE -
1-658-117-12, 21

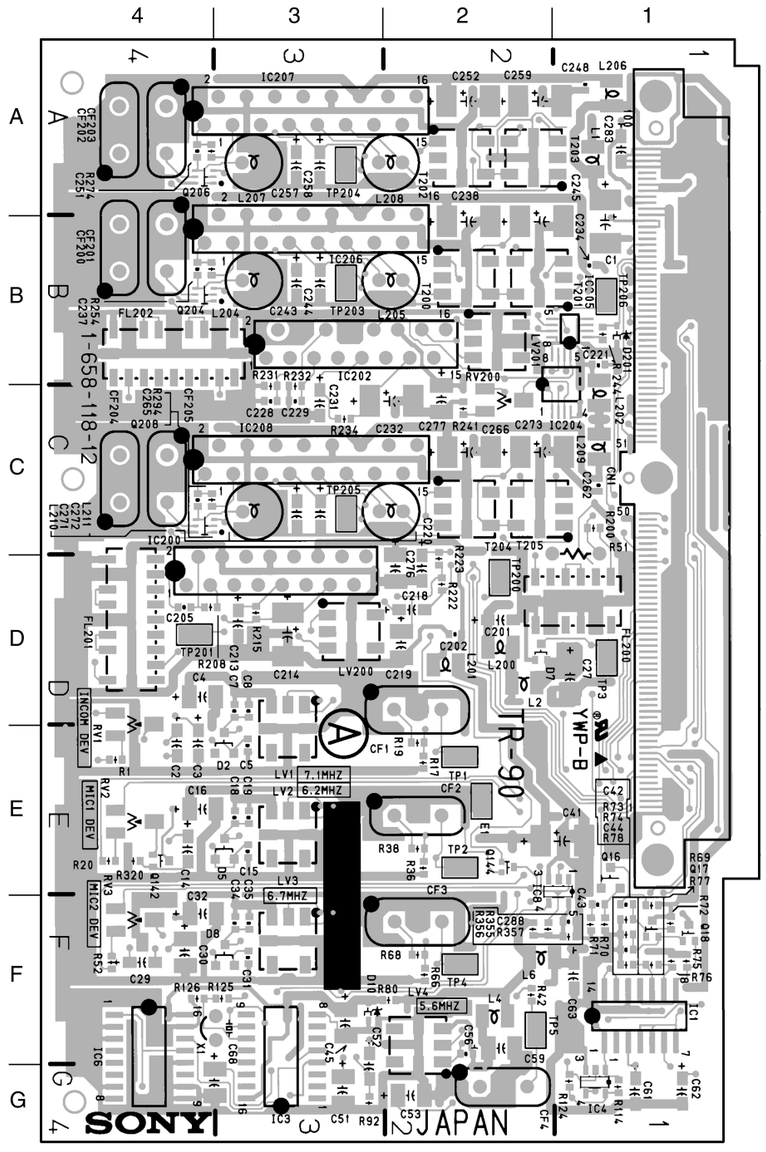


AU-211 - B SIDE -
1-658-117-12, 21

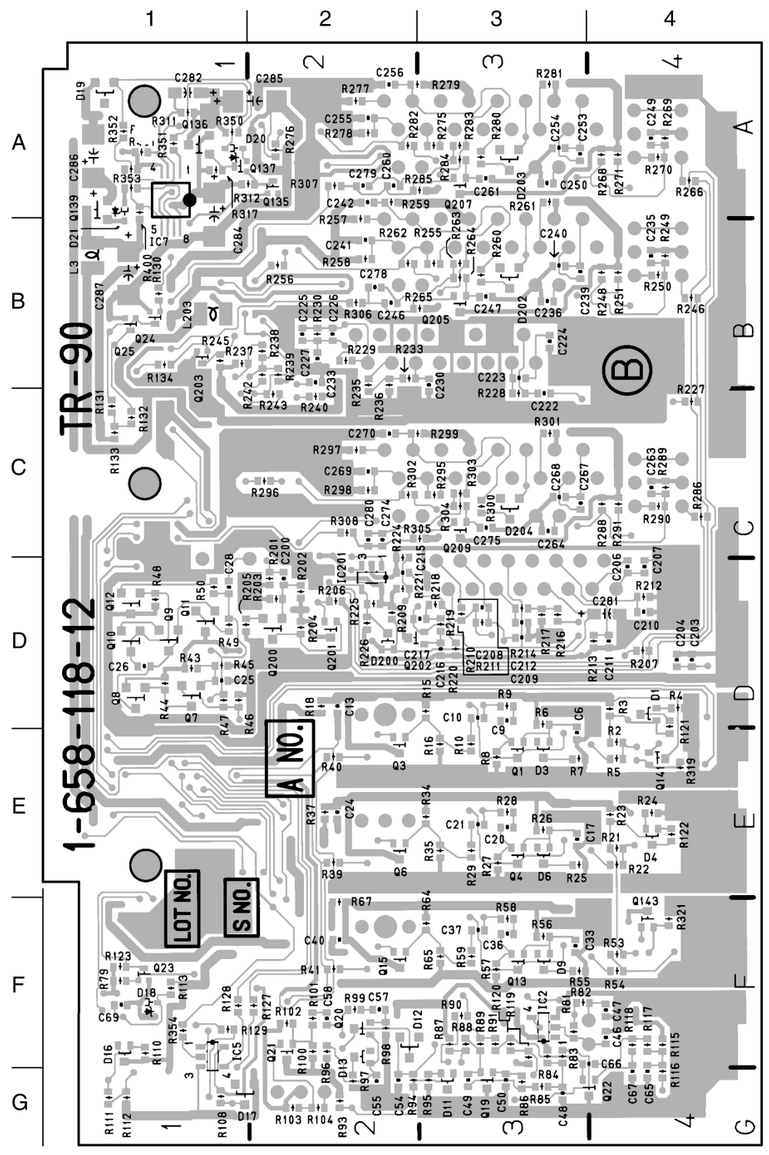
http://getMANUAL.com

CA-550 (UC)
CA-550 (J)
CA-550P (CE)

TR-90 BOARD



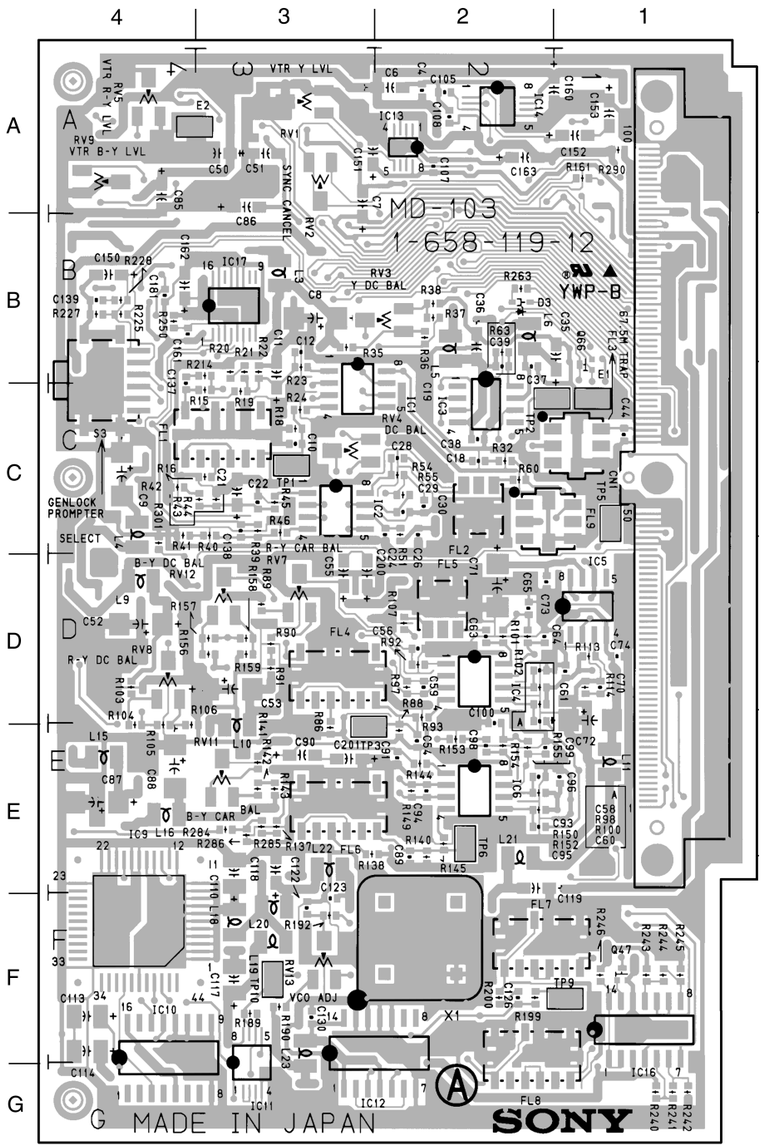
TR-90 - A SIDE -
1-658-118-12, 21



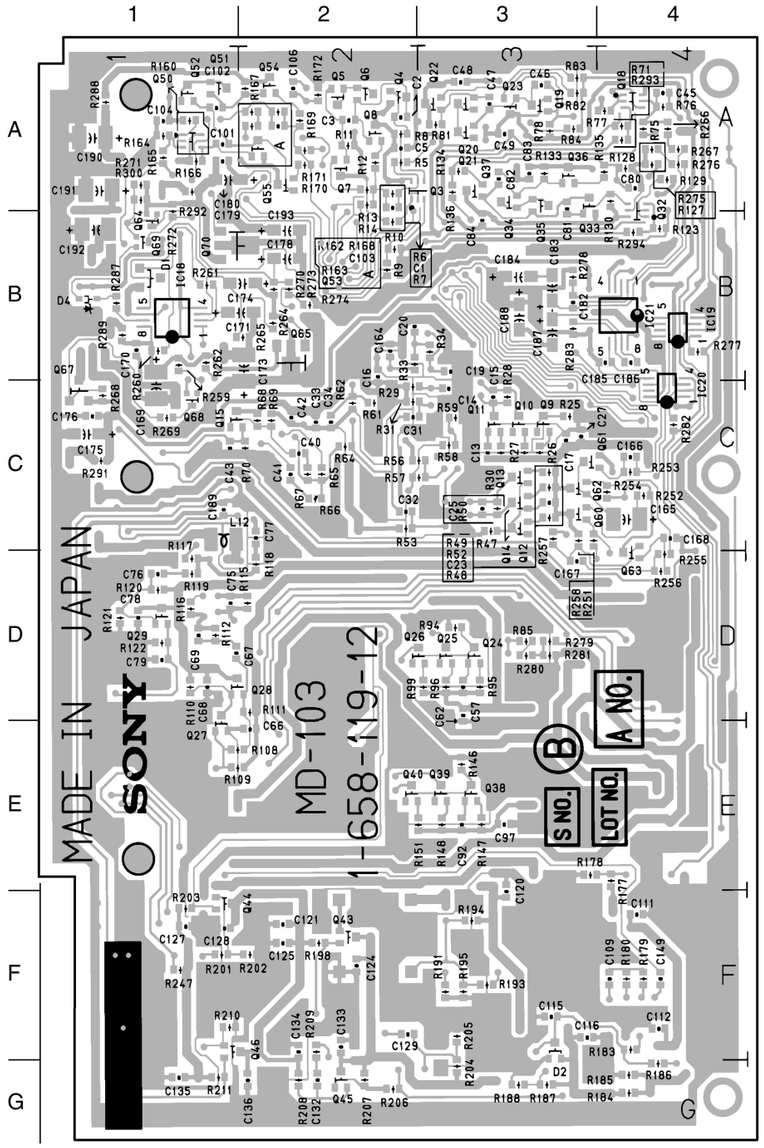
TR-90 - B SIDE -
1-658-118-12, 21

CA-550 (UC)
CA-550 (J)
CA-550P (CE)

MD-103 BOARD



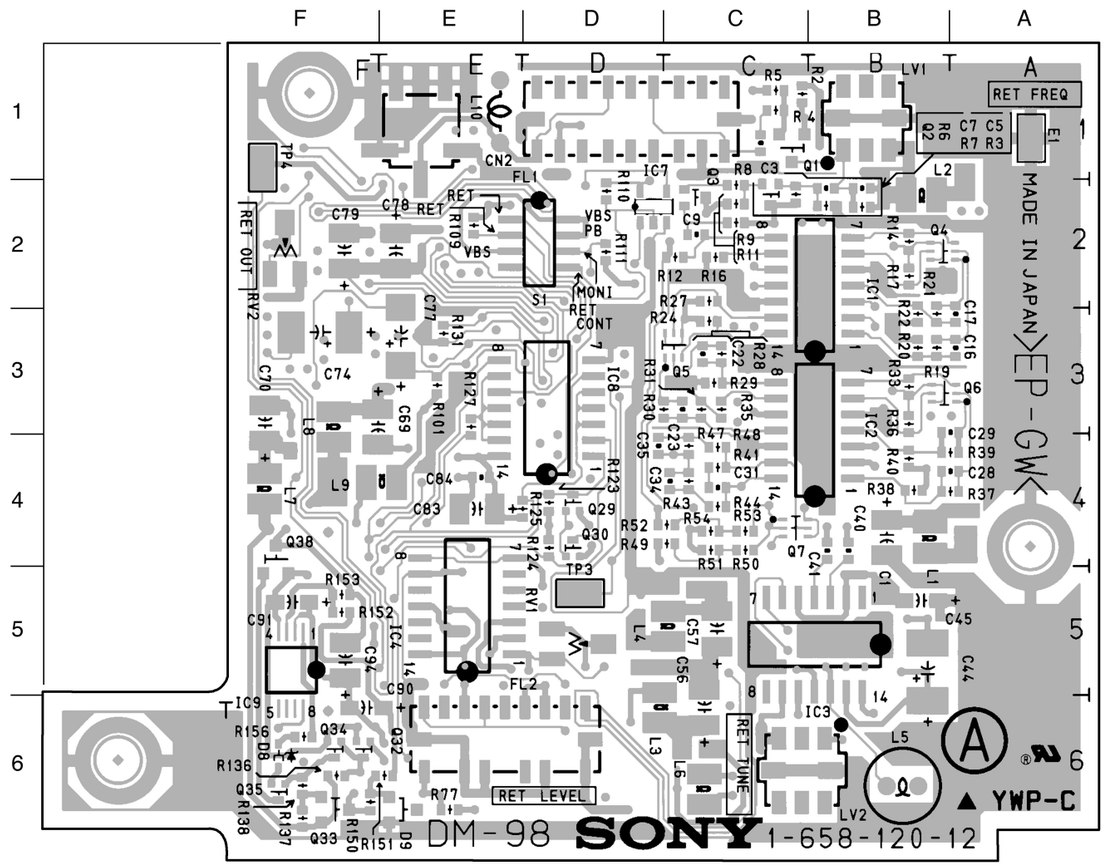
MD-103 - A SIDE -
1-658-119-12, 21



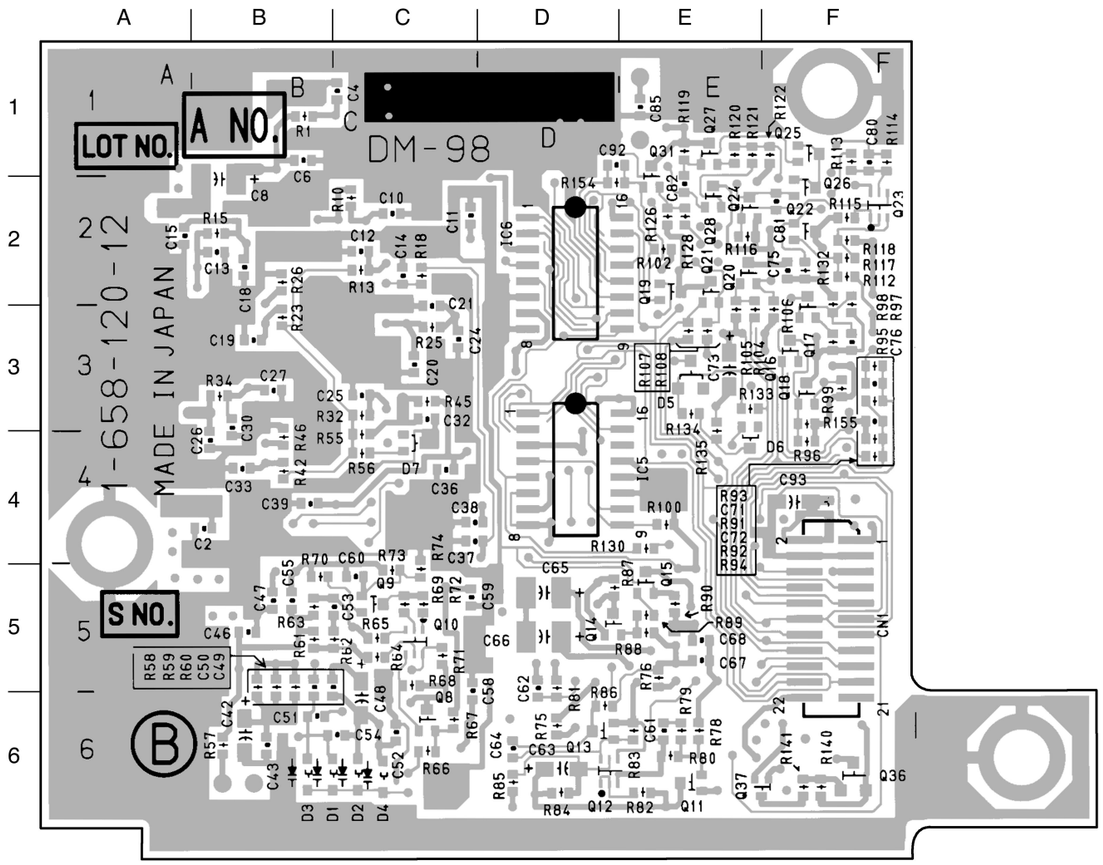
MD-103 - B SIDE -
1-658-119-12, 21

CA-550 (UC)
CA-550 (J)
CA-550P (CE)

DM-98 BOARD



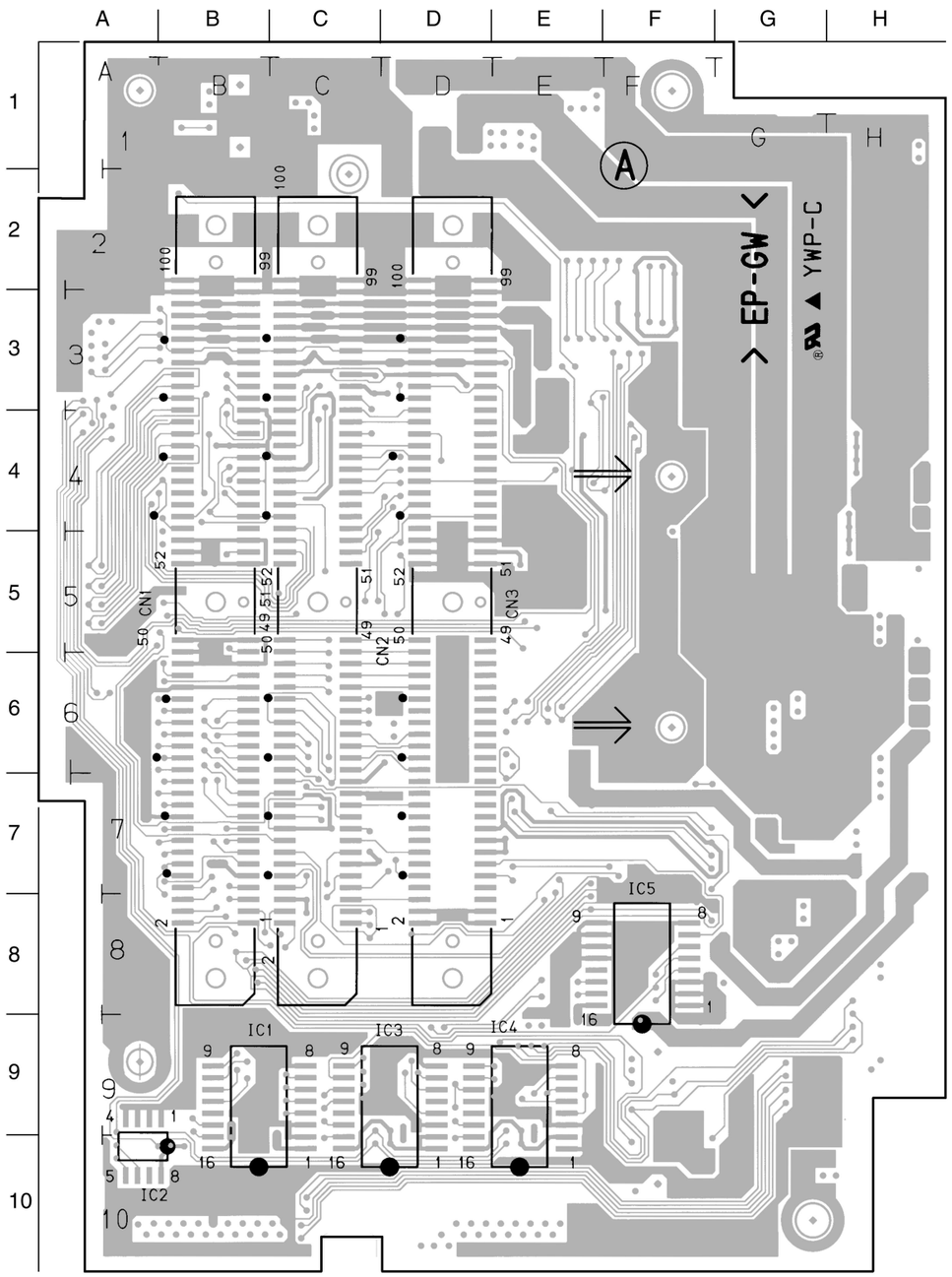
DM-98 - A SIDE -
1-658-120-12, 21



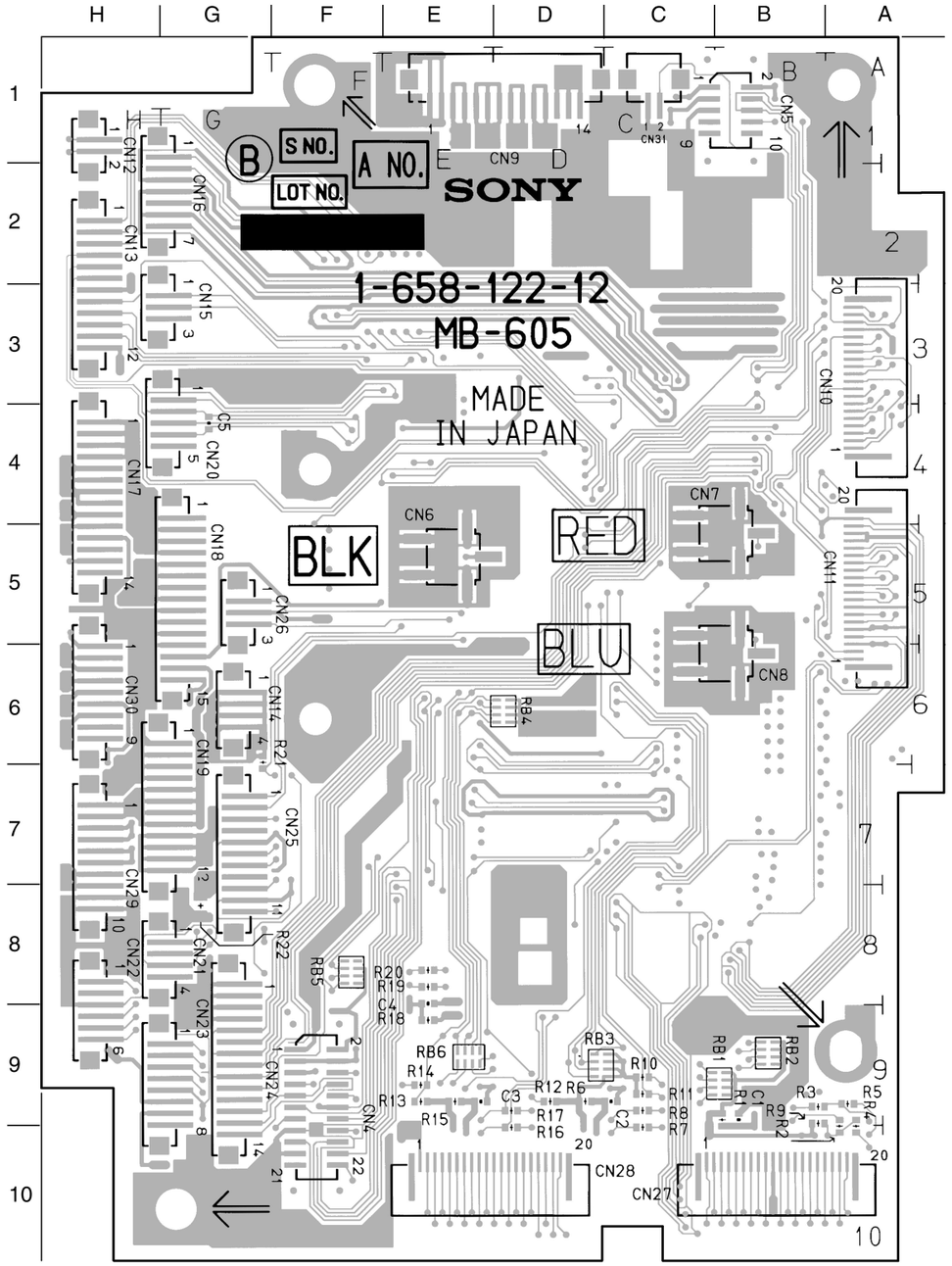
DM-98 - B SIDE -
1-658-120-12, 21

CA-550 (UC)
CA-550 (J)
CA-550P (CE)

MB-605 BOARD



MB-605 - A SIDE -
1-658-122-12, 21



MB-605 - B SIDE -
1-658-122-12, 21

このマニュアルに記載されている事柄の著作権は当社にあり，説明内容は機器購入者の使用を目的としています。
従って，当社の許可なしに無断で複写したり，説明内容(操作，保守等)と異なる目的で本マニュアルを使用することを禁止します。

The material contained in this manual consists of information that is the property of Sony Corporation and is intended solely for use by the purchasers of the equipment described in this manual.
Sony Corporation expressly prohibits the duplication of any portion of this manual or the use thereof for any purpose other than the operation or maintenance of the equipment described in this manual without the express written permission of Sony Corporation.

Le matériel contenu dans ce manuel consiste en informations qui sont la propriété de Sony Corporation et sont destinées exclusivement à l’usage des acquéreurs de l’équipement décrit dans ce manuel.
Sony Corporation interdit formellement la copie de quelque partie que ce soit de ce manuel ou son emploi pour tout autre but que des opérations ou entretiens de l’équipement à moins d’une permission écrite de Sony Corporation.

Das in dieser Anleitung enthaltene Material besteht aus Informationen, die Eigentum der Sony Corporation sind, und ausschließlich zum Gebrauch durch den Käufer der in dieser Anleitung beschriebenen Ausrüstung bestimmt sind.
Die Sony Corporation untersagt ausdrücklich die Vervielfältigung jeglicher Teile dieser Anleitung oder den Gebrauch derselben für irgendeinen anderen Zweck als die Bedienung oder Wartung der in dieser Anleitung beschriebenen Ausrüstung ohne ausdrückliche schriftliche Erlaubnis der Sony Corporation.

CA-550 (J,UC)
CA-550P (CE) J,E
3-190-369-01

Sony Corporation
Broadcast Products Company

Printed in U.S.A.
1996. 1 76
© 1996
Published by Broadcast Products Company